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INVESTIGATION OF CONCENTRATION OF ECONOMIC POWER

TEMPORARY NATIONAL ECONOMIC COMMITTEE

A STUDY MADE UNDER THE AUSPICES OF THE FEDERAL
TRADE COMMISSION FOR THE TEMPORARY NATIONAL
ECONOMIC COMMITTEE, SEVENTY-SIXTH CONGRESS,
THIRD SESSION, PURSUANT TO PUBLIC RESOLUTION
NO. 113 (SEVENTY-FIFTH CONGRESS), AUTHORIZING
AND DIRECTING A SELECT COMMITTEE TO MAKE A
FULL AND COMPLETE STUDY AND INVESTIGATION
WITH RESPECT TO THE CONCENTRATION OF ECONOMIC
POWER IN, AND FINANCIAL CONTROL OVER,
PRODUCTION AND DISTRIBUTION
OF GOODS AND SERVICES

MONOGRAPH No. 13

RELATIVE EFFICIENCY OF LARGE, MEDIUM- SIZED, AND SMALL BUSINESS

Printed for the use of the
Temporary National Economic Committee



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MONOGRAPH NO. 13

RELATIVE EFFICIENCY OF LARGE, MEDIUM-SIZED, AND SMALL BUSINESS

FEDERAL TRADE COMMISSION

ACKNOWLEDGMENT

The Temporary National Economic Committee is greatly indebted to the Federal Trade Commission for this contribution to the literature of the subject under review.

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Chairman, Temporary National Economic Committee.

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LETTER OF TRANSMITTAL

FEDERAL TRADE COMMISSION,
Washington, August 14, 1940.

Dr. H. DEWEY ANDERSON,
*Executive Secretary to the
Temporary National Economic Committee,
Federal Trade Commission Building, Washington, D. C.*

DEAR DR. ANDERSON: The Commission has considered and approved a report on the relative efficiency of large, medium-sized, and small business in the United States. This subject was assigned by the Temporary National Economic Committee to the Federal Trade Commission for investigation. The instructions of the Commission are that the report be transmitted to you for consideration by the committee.

Sincerely yours,

WILLIS J. BALLINGER,
Economic Adviser to the Commission.

METHOD OF INQUIRY

The Temporary National Economic Committee requested the Federal Trade Commission to inquire into the relative efficiency of large, medium-sized, and small business in the United States. After a preliminary examination of the subject under discussion, it appeared that there were three possible methods of inquiry. The first problem of the Commission was to determine which of these three methods it would select.

I. Should the Commission collect and appraise the opinions of responsible businessmen with respect to the relative efficiency of large, medium-sized, and small business in the United States? Many statements, some supported and some unsupported by statistical data, concerning the relative advantages of different-sized business units can be found in testimony before governmental bodies and in publications of private agencies. The Commission, moreover, might have supplemented such published statements with fresh testimony from responsible heads of business units of different size.

II. Should the Commission collect and appraise the opinions of economic theorists with respect to the relative efficiency of large, medium-sized, and small business in the United States? The Commission found in existence an extensive literature dealing with the subject from the standpoint of economic theory. This literature was made up of economic textbooks, articles in scientific journals, and economic treatises.

III. Is there any way that business efficiency can be statistically measured? If so, could the Commission obtain enough reliable data from a variety of industries with which to test business efficiency on a sufficiently comprehensive scale to avoid criticism that the tests made were too limited in their scope to warrant any conclusions about industry in general?

After considerable discussion of the advantages and disadvantages of consulting with leaders in business for their viewpoints and opinions on the problem of the relative efficiency of large, medium-sized, and small business, the Commission rejected this method of inquiry for two principal reasons: (1) The testimony of business leaders would, it was agreed, generally have to be confined to their own particular corporations in a field of industry. The subject under inquiry called for a study of "relative efficiency." Businessmen testifying about relative efficiency in particular industries might be expected to favor the size business which they represented. This kind of testimony would, it was believed, consist largely of assertions and counter-assertions, which would generally not be capable of convincing proof or disproof. (2) If business efficiency could be tested objectively and concretely, this method, the Commission felt, would be more satisfactory.

An extensive exploration of the theoretical economic literature bearing upon the subject under investigation revealed a definite conflict of two fundamental viewpoints. On one hand there were

specified certain economies which, it was claimed could only be achieved by business of large size. Thus it was frequently pointed out that large corporations could purchase their materials and supplies at lower prices than corporations of smaller size; that such corporations could get better terms from jobbers in the distribution of their products; that they could deal more effectively with labor; that they could get capital at lower rates of interest; that they could get more advantageous treatment from railroads in the shipment of their products; that they could secure continuous operation of their plants; that they could achieve a more advantageous specialization of plants and machinery and a more advantageous specialization of managerial ability; that they could employ in each plant the best devices, including those patented; that they could utilize byproducts more effectively; that they could secure savings in fire insurance because of wide distribution of plants; that they could achieve smaller fixed charges per unit of product; that they could achieve economies in advertising and on traveling salesmen; that they could avoid cross-freights, economize on bad debts and achieve a better quality of goods.

On the other hand, that part of the theoretical economic literature which criticized large size in business either denied that certain economies claimed for large size actually existed or argued that where they did exist they were obtained at the expense of free and fair competition. Thus it was contended that the ability of large corporations to purchase their materials and supplies at lower prices represented in many cases not efficiency but the financial and economic power of such large corporations to extort from weaker and unorganized sellers; that it was one of the purposes of the Robinson-Patman Act to prevent this very kind of abuse of economic power.

Similarly other critics contended that though large corporations were able to encroach upon their jobbers' margins, this kind of savings merely reflected the financial and economic power of such large corporations to exploit their distributors; that large corporations had frequently sweated labor; that many large corporations had not been able to secure their capital more cheaply than smaller-sized business because such corporations had often been the victims of financial usury, represented by exorbitant underwriting commissions, when they raised their money; that many large corporations had secured discriminatory treatment from railroads in shipping their products; that many large corporations had not achieved continuous operations of their plants¹; that the alleged specialization of plant machinery and ability in large corporations with numerous plants was not as effective a specialization as could be secured if corporate management concentrated its energies on one or a few plants of reasonable size; that large corporations had frequently suppressed the best devices, including patents; that byproducts could often be utilized more effectively by well-managed medium-sized or small corporations; that economies in insurance could not be significant so far as affecting the price of a product; that overhead charges which resulted from extravagant and even corrupt promotional activity would not give as low a cost per unit of product as overhead charges in smaller corporations which were more soundly financed; that overhead in large corporations which had overexpanded and which had

¹ Data showing that all during the twenties many of our very large corporations had much idle plant capacity were referred to.

idle plant capacity would not result in as low a cost per unit of product as overhead charges in smaller corporations more prudently expanded where plant capacity was more fully utilized; that a lower cost of advertising in the case of certain larger corporations reflected only the ability of such corporations to control competition; that in certain industries consolidations or mergers could not have produced any economies in advertising; that in others the cost of advertising went up rather than down with the creation of large corporations; that large corporations, because of their wider areas of distribution, may not be in such close contact with their customers nor so fully aware of their credit risks as smaller corporations with more localized fields of distribution; that quality of product requires close supervision of management and the receptivity of such management to new ideas; and that management in smaller corporations can, in the case of many products, better effect these ends than management in large corporations which has to rely upon methods of remote control and is handicapped by the red tape of such large organizations.

This kind of theoretical economic material presented many fundamental difficulties. An approach to the problem of relative efficiency of large, medium-sized, and small business from the standpoint of assaying the relative merits of such opposing contentions was not adopted by the Commission for the following reasons:

(1) The expense would be prohibitive for the Commission to determine first, whether large-sized business in the United States obtained certain economies which smaller-sized business could not achieve; secondly, whether the economies achieved by large-sized business were or were not achieved at the sacrifice of a free and fair competitive system. This kind of inquiry would have taken the Commission into many complex and diverse fields of inquiry such as labor, capital, markets, purchasing policies of corporations, patents and inventions, and many others. Aside from the expense entailed, this kind of inquiry would have consumed too much time.

(2) If the Commission had utilized this method of approach to the problem under inquiry and had found that large-sized business did achieve certain economies which were not justified from the standpoint of free and fair competition, the question would still remain whether large-sized business without these economies was less or more efficient than medium-sized or small business. On the other hand, if the Commission had found that certain economies were achieved by large-sized business which were justifiable from the standpoint of free and fair competition, there would still remain the very important question of whether, in spite of such handicaps, medium-sized or small business might, nevertheless, be more efficient, since such economies might be more than offset by inefficiency resulting from the greater difficulties of managing large-sized business.

After consultation with Government experts and private experts, the Commission became convinced that business efficiency could be subjected to two objective and scientific tests. In the final analysis, efficiency in business means ability to produce and distribute goods at the lowest possible cost. The cost of producing a unit of product is perhaps the most important single test of business efficiency. Due to the inability to secure separate data on distribution costs, the rate of return on invested capital has been used as the second criterion. This

latter ratio supplements the former, since both production and distribution costs are reflected in rate of return. Thus, the use of the ratio of return on invested capital has been especially of advantage in industries where cost data were inadequate or where products were not directly comparable.

The Commission was influenced in selecting these two accounting measurements of business efficiency because they represent standards which businessmen themselves most respect. Moreover, they are concrete and have the advantage of being susceptible of statistical measurement. Having decided that business efficiency could be measured objectively and scientifically by these two tests, the Commission explored the possibility of three methods for obtaining the accounting data necessary for applying such tests: (a) Obtaining new data from business by questionnaire and field work; (b) utilization of data, collected chiefly from Government sources but reworked by private agencies; (c) analysis of a great amount of data on costs and rates of return on invested capital found in the files of Government agencies.

The possibility of securing from industry through questionnaire and field work new data relating to costs of production and rates of return was abandoned by the Commission for the following reasons: It was the opinion of every expert consulted that such a study would require a sum of money far in excess of the amount allocated to the Commission by the Temporary National Economic Committee for conducting its inquiry. Some experts were of the opinion that this kind of a study would require in the neighborhood of a million dollars. The sum available to the Commission for conducting an inquiry into the relative efficiency of large, medium-sized and small business was approximately only \$20,000.

On the technical and scientific side there was a serious defect in this method of inquiry. The experts consulted agreed that the possibility of getting any but current costs in business would have been small. Such data could, therefore, have only applied to the present situation in business, which is, of course, a depression and recovery period. Conclusions for one phase of the business cycle might not apply to other phases.

The most significant studies of private investigators or agencies making a statistical use of accounting data were examined by the Commission. It was the opinion of the Commission, however, that though some of these studies were very useful they should be supplemented by other material for several reasons:

(1) These studies show the varying rates of return on capital investment for groups of different-sized companies, but they do not show the rates of return of individual companies.² The Commission thought it important to compare the rate of return earned by the largest corporation in various industries with those earned by other large, medium-sized, and small companies in the same industries.

(2) A rate of return on invested capital for a corporation is the ratio of net earnings to the total amount of capital invested. It is highly important in obtaining this ratio that both net earnings and

² Epstein, Ralph Cecil, *Industrial Profits in the United States*. National Bureau of Economic Research. New York, 1934.

Crum, William Leonard, *Corporate Size and Earning Power*, Cambridge, Mass., Harvard University Press, 1939.

Twentieth Century Fund, *How Profitable Is Big Business?* New York, Twentieth Century Fund, Inc., 1937.

the total amount of capital invested be accurately determined. Private investigators approaching the problem of business efficiency from the standpoint of the rate of return on invested capital for corporations of various sizes generally have used data furnished by the United States Bureau of Internal Revenue. The Bureau's figures with respect to net income are generally accurate, because Federal taxes are based upon such net income. Excessive allowances for depreciation, depletion, or obsolescence, as reported by corporations to the Bureau, are frequently revised, so that the real net income of such corporations may not be understated. The Bureau, however, does not analyze the balance sheets of corporations to determine whether such balance sheets state the true amount of invested capital. Apparently the income-tax law does not even require corporations to furnish balance sheets. A considerable number of corporations do not submit balance sheets with their tax returns. The balance sheets that are submitted to the Bureau are generally accepted without verification.

In the course of its extensive experience in computing rates of return on invested capital in many industries, the Commission has frequently found that invested capital, as shown by a company's books or computed by a company's accountants, may often be too high, for many reasons. There may be an overvaluation of fixed assets, because such assets have been arbitrarily written up by the company's accountants. Inventories may be overappraised. The item of goodwill alone may be grossly manipulated. There are some cases where goodwill should not be carried as an asset at all. There are other cases where goodwill may be entered at an exaggerated value. Such overvaluations, if allowed, reduce the rate of return on invested capital. The Commission has found that sometimes corporations overstate their invested capital for the purpose of concealing high earnings.

The assets of a large corporation, as shown by the books of the corporation, may also understate the rate of return on invested capital for another reason. The corporation may have evolved from a series of mergers or consolidations, and its assets may have been arbitrarily written up by promoters. Where this occurs, unless such watering of assets is corrected, the rate of return on invested capital as shown by the company's books will be less than what it should be. Testing business efficiency, therefore, from the standpoint of the rate of return on invested capital, would work an injustice to many large corporations unless their balance sheets were properly revised to eliminate write-ups of assets.

Consequently, in comparing the rates of return on invested capital of large, medium-sized, and small business in a variety of industries the Commission used its own accounting staff wherever possible to carefully check the balance sheets of corporations so that the amount of invested capital might be accurately determined.

(3) The Commission was of the opinion that while the rate of return on invested capital is an important test of business efficiency, it should be supplemented by another test, cost of production, which the Commission deemed to be perhaps an even more important criterion for measuring such efficiency. There have been a few private studies of business efficiency, in which average costs of groups of companies or plants of different size were used. But these studies covered only a few products or industries, and showed average costs of groups of

companies rather than costs of individual companies. The Commission felt that private studies of costs needed to be greatly supplemented.

(4) Finally, the Commission has always followed, wherever possible, the policy of reporting to the Congress on material which its own investigators have developed.

The Commission discovered that in the files of Government agencies there have been steadily accumulating over the last 25 years an abundance of data on costs and rates of return on invested capital for many industries. A very considerable sum of money was found to have already been carefully spent by various governmental and State agencies for inquiries into costs, profits, and the general structure of important industries over the past quarter-century. If it be urged that some of these studies which were considered by the Commission were not up to date, it should be realized that the principle involved can be more effectively tested the larger the time periods covered and the wider the time range.

One further problem confronted the Commission with respect to the validity of using costs and rates of return as final tests of business efficiency. Reference has been made to the fact that reputable students have often charged that large-sized business can show certain economies, but that these economies are achieved at the expense of free and fair competition. That such substantial economies do exist is admitted by both defenders and critics of large-sized business. The question of their existence, therefore, is not in doubt. The question whether such economies are justifiable from the standpoint of a sound competitive system, however, remains controversial between these private defenders and critics of large-sized business.

If the abundance of cost and financial data in the files of Government agencies had shown that the largest companies had invariably had the lowest costs and the best rates of return on invested capital, the use of the tests of business efficiency which the Commission adopted might have been exposed to the criticism that such tests might not have eliminated certain savings obtained by large-sized business and certain sources of revenue obtained by such business which were realized through predatory business practices.

The Commission realized that in testing business efficiency by costs of production and rates of return on invested capital, there was no way of preventing such tests from being biased in favor of large-sized business, because of the possible inclusion into costs and rates of return on invested capital of economies and income due to the ability of the financial and economic power of large corporations to exploit free and fair competition.

If, however, the results of the Commission's tests were in favor of medium-sized or small business, this kind of criticism would no longer be tenable. In such an event, the results of the tests would, the Commission felt, very probably have the conservative advantage of understating the real effectiveness of medium-sized or small business.

The cost and financial data obtained by the various Government departments in their studies of important industries are for the most part so extensive and detailed that it was possible for the Commission to avoid certain fundamental criticisms which can be made if cost is used indiscriminately as a measuring rod of efficiency in business. For example, it may be urged that because a certain group of plants

or companies of medium size may happen to have the lowest costs during one time period is no proof that units of this size invariably or generally have the lowest costs.

The availability of data for most industries during a series of years or other time periods makes it possible to determine whether the apparent relation between size and efficiency is persistent and not merely accidental or temporary.

Again, it may be urged that when certain small or medium-sized plants or companies situated in one region invariably or generally have the lowest costs, their location rather than their size may furnish the explanation. The availability of a sufficient number of unit costs for plants and companies in the various important producing regions made it possible in some industries to analyze the relation between size and cost within a region, where every plant and company has practically the same regional advantages or disadvantages. Analysis of the relation between size and cost within a region affords a measurement of the effect of size, after the effect of location has been eliminated.

The cost of producing a gallon of gasoline in a refinery located in the interior States, Illinois, Indiana, Ohio, etc., may be higher than the cost in almost every Gulf coast refinery because Gulf coast refineries may be nearer their crude oil supply. For instance, the fact that the larger Gulf coast refineries have lower costs than the smaller Illinois refineries would furnish no evidence as to the effect of size of refinery on the cost of its petroleum products.

The obvious method of discounting the effect of this difference in costs of transporting crude oil when analyzing the relation between size of refinery and cost of gasoline would be to separate the Gulf coast refining costs from the midcontinent refining costs for the purpose of two separate regional cost comparisons. In certain industries where peculiar geographic conditions affected costs of production regionally, the extensiveness of the data available enabled the Commission to analyze such costs regionally. In many industries, however, a regional comparison of costs was not necessary.

Another method of discounting the effect of the different crude-oil transportation costs referred to would be through a comparison of refinery costs after the exclusion of the cost of crude oil. For most of the governmental inquiries, the costs obtained were so itemized that it is possible to make almost any type of comparison desired. For the reason given and for other obvious reasons comparisons of plant or company costs after the exclusion of the cost of raw material may be highly significant. For example, the cost of producing bread, after exclusion of the cost of the ingredients, may be more useful for the purpose of this inquiry than the total cost including ingredients. Different bakeries producing different qualities of bread may use different ingredients and realize different prices per pound.

The technique of the Commission in applying efficiency tests to business was to employ the well-recognized method of statistical sampling. Obviously, the reliability of such a statistical method will depend upon the size of the sample. If data for only one or two industries were available, conclusions for industry in general would be inadmissible from such a small sample. The Commission feels that the sample used in this inquiry constitutes an unusually large

cross-section of American business. Costs or financial data were utilized in the following 18 industries:³

Cement.	Milk distribution.
Blast furnaces.	Butter.
Steel mills.	Canned milk.
Farm machinery.	Flour milling.
Petroleum production.	Baking.
Petroleum refining.	Motor vehicles.
Beet-sugar production.	Chemicals.
Cane-sugar production.	Fertilizers.
Sugar refining.	Rayon.

These industries make hundreds of products. They had a total value of product equal to about one-fourth of the total value of product shown for all industries in the Census of Manufactures for 1937.

Six basic tests of business efficiency were made:

(1) Cost of production test for individual companies classified as large, medium-sized, or small. This kind of business efficiency test involves the following factors:

(a) The selection of a product; (b) the selection of a time period which the test is to cover; (c) the obtaining of the costs of all companies engaged in the production of this product for which costs are available; (d) the classification of each company as large, medium-sized, or small; (e) the costs of the various companies engaged in the production of this product together with a size classification for each company are then arranged in order of ascending costs, from lowest to highest. The ascending cost series then shows the relationship between size and cost.

(2) Cost of production test for individual plants classified as large, medium-sized, or small. This kind of test involves the same factors as the cost of production test for individual companies.

(3) Cost of production test for groups of companies classified as large, medium-sized, or small. This test is useful in showing whether large size is on the average more efficient than medium or small size in business. Thus, it might be contended that though individual companies of large size might not have the lowest costs in a test, taken as a whole, large size was more efficient than medium or small size. Group tests of size throw light on the validity of such a contention.

This kind of test includes the following elements:

(a) The selection of a product; (b) the selection of a time period during which the product is produced; (c) the obtaining of the costs of all companies engaged in the production of this product for which costs are available; (d) the grouping of all companies into categories of size; (e) the averaging of the cost of production for each group. This information will then show whether the large, medium-sized, or small companies had as a group the lowest average cost.

(4) The cost of production test for groups of plants classified as large, medium-sized, or small. This test involves the same technique as the cost of production test for groups of companies classified as large, medium-sized, or small. It is also useful in determining whether large-sized plants in an industry for a certain time period were on the average more efficient than medium-sized or small plants in the industry.

³ Tables are presented beginning p. 21.

(5) The rate of return on invested capital test for individual companies classified as large, medium-sized, or small. This test consists of the following elements:

(a) The selection of a time period for an industry; (b) computing the rates of return on invested capital for all the companies in this industry during this time period; (c) classification of the companies as large, medium-sized, or small; (d) making of a table showing each company with its size classification and its rate of return on invested capital for the time period.

An inspection of this table will show at once whether a large, a medium-sized, or a small company had the highest rate of return on invested capital.

(6) A rate of return on invested capital test for groups of companies classified as large, medium-sized, or small.

This test is effected similarly to the way in which a test of the rate of return on invested capital for individual companies classified according to size is made. The only difference is that the companies are grouped and the average rate of return for each size group is determined. An inspection of a table setting forth these results will show which group of companies, large, medium-sized, or small, had the highest average rate of return for the time period. This kind of test is also useful in testing the contention that where large-size companies do not have the highest rate of return, such companies may on the average have higher rates of return than medium-sized or small companies on the average.

In 14 of the 18 industries covered in its inquiry, the Commission was able to make 59 tests of costs for individual companies and 11 tests of costs for groups of companies classified as large-sized, medium-sized, or small. Thus, the Commission was able to make 70 cost tests of large, medium-sized, or small companies in these 14 industries.

The Commission was able to make 53 cost tests of individual large, medium-sized, or small plants; to make 5 cost tests of plants grouped as large, medium-sized, or small. Thus, the Commission was able to make a total of 58 cost tests of large, medium-sized, or small plants.

Altogether, the Commission was able to make 128 cost tests of individual large, medium-sized, or small companies and plants or companies or plants grouped as large, medium-sized, or small.

The Commission was able to make 105 tests of the efficiency of large, medium-sized, and small companies in 18 industries from the standpoint of their individual rates of return on invested capital. There were 84 tests of rate of return on invested capital for individual companies classified as large, medium-sized, or small in these industries. Twenty-one tests were made of companies grouped as large, medium-sized, or small.

It should be pointed out that a number of tests included in the 233 total tests of business efficiency made by the Commission really embrace more than one test. For example, some tests show data for a number of time periods, each one of which affords a separate test of efficiency. Again, some tests contain costs for a number of geographical areas, each of which furnishes a separate test of efficiency. Finally, some tests have been made in two or more ways by excluding or including certain items of cost.

For instance, in the flour-milling industry the claim was made that the large flour millers purchased a superior and expensive grade of wheat, which was not used by smaller concerns in the industry. Accordingly, the Commission not only showed the total cost of the various flour manufacturers, but a special series was constructed to show the cost of producing flour with the cost of grain excluded. In this same industry it was also contended that the packaging of the big flour millers was far more expensive than the packaging of the small flour millers because the large flour millers sold in greater quantities. The Commission, accordingly, constructed a cost table showing the cost of production of the various flour millers with the cost of packaging and the cost of grain excluded.

In the application of the two tests of business efficiency adopted by the Commission, it may be expected that if large-sized business in the United States is the most efficient kind of business, as many seem to believe, the largest companies should invariably, or at least usually, show the lowest costs and the best rates of return on invested capital. If large-sized companies (plants) secured only an even break with medium-sized companies (plants) or small-sized companies (plants) in the tests, it could reasonably be inferred that the superior efficiency of large size in American business is questionable. If however, certain medium-sized or small-sized companies (or plants) scored decisively in the tests, it might be reasonable to conclude that the long standing contention that large size insures efficiency in business is extremely doubtful.

The results of the total tests reveal that the largest companies made, on the whole, a very poor showing. This should not be taken to mean that in every test all medium-sized or small companies had lower costs or better rates of return on invested capital than the largest companies. Indeed, most cases of highest costs were those of very small companies. This, in turn, should not be taken to mean that the average costs of large-sized businesses were necessarily lower than the average costs of medium-sized or small businesses. Cost tests for groups of companies classified as large, medium sized, or small throw light on this possibility. Moreover, medium size in itself did not insure a low cost or a high rate of return. But certain efficient medium-sized units—and in some industries certain efficient small units—generally made the best showing.

Furthermore, in the tests of group efficiency, the corporations grouped as medium sized or small sized had preponderately lower average costs of production or higher rates of return on invested capital than the groups of large-sized corporations with which they were compared.

The Commission wishes to state very clearly to the Temporary National Economic Committee its position in regard to what conclusions may be reached from the tests of business efficiency conducted by the Commission regarding the relative efficiency of large, medium sized, or small business in the United States. The Commission feels that the efficiency tests adopted in this inquiry are the best available scientific tests. They had the endorsement of experts who were consulted on this problem and are used by businessmen themselves. The basic data used also for making the tests are, in the opinion of the Commission, reliable. This material, taken from Government files,

was scrutinized and its applicability for the problem at hand was carefully considered. The data were obtained by agencies of the United States Government, equipped with large and competent accounting staffs. Practically all the figures used have already been submitted to the Congress in the form of Government reports, but in these reports they are almost invariably shown as averages. The original material was consulted for the purpose of determining costs of production and rates of return on invested capital for individual companies (or plants). The Commission was unable to find that these basic data were at any time seriously challenged. The confidential material obtained from the United States Tariff Commission was reviewed and its use approved by that Commission. All the data were rechecked by a special committee of accountants and experts of the Federal Trade Commission. The Chief Accountant of the Commission has certified to the Commission that the data have been accurately assembled and that the accounting techniques employed in determining costs and rates of return on invested capital are scientifically valid.

The Commission in submitting the results of these tests to the Temporary National Economic Committee offers no definite opinion as to whether they conclusively disprove the claim frequently made that large size in American business is more efficient than medium size or small size. But the Commission does believe that in transmitting the results of these tests to the Committee it is contributing information concerning the efficiency of size, which is of large public interest and of service to the Committee.

The Commission is of the opinion that the data which it has here assembled are in many respects more comprehensive and detailed than those in any previous study of this problem. For this reason alone the Commission considers that the study is an important contribution to this field of economic inquiry. Whether the results of the tests conducted by the Commission cast serious doubt on the superior efficiency of large size in American business must be left to the judgment of the Committee.

RESULTS OF THE TESTS

INDIVIDUAL COMPANY-COST TESTS

In but 1 of the 59 individual company-cost tests did the largest company have the lowest cost.

In 21 of these 59 tests, a company classified as medium-sized had the lowest cost.

In 37 of these 59 tests, a company classified as small had the lowest cost.

Of particular significance is the fact that in these 59 tests, on the average, over one-third of the companies in every array had costs lower than that of the largest company.⁴

TESTS FOR GROUPS OF COMPANIES

In only 1 of the 11 tests derived from the tables showing average costs of companies, grouped according to size, did the group containing the largest companies have the lowest average cost shown for any group.

In 10 of the 11 tests the group containing companies generally classified as medium-sized had the lowest average cost shown for any group.

INDIVIDUAL PLANT-COST TESTS

In the 53 individual plant-cost tests, the largest plant had the lowest cost in only 2 tests.

A large plant, although not the largest, had the lowest cost in 4 tests.

In 21 of the 53 tests, plants classified as medium-sized had the lowest cost.

In 26 of the 53 tests, plants classified as small had the lowest costs.

In these 53 tests, over one-third of the plants in each cost array had on the average lower costs than that of the largest plant.⁵

TESTS FOR GROUPS OF PLANTS

In every one of the five tests for groups of plants, the group containing the plants classified as medium-sized had the lowest average cost shown for any group.

⁴ The number of companies with lower costs than that of the largest company was determined for each test or cost array. Then, this number was divided by the total number of companies in the array in order to find the percentage of the total number of companies with costs lower than that of the largest company. Thus, if in an array of 100 companies, 20 had costs lower than that of the largest company, 20 percent of all the companies had a better cost position than the largest company. An average of these 59 percentages gave the average proportion of the total number of companies that had lower costs than the largest company.

⁵ The position of the largest plant in each plant-cost array was determined by dividing the total number of plants in the array into the number of plants with better cost positions—that is, lower costs—than that shown by the largest plant. The fraction thus arrived at gives the percentage of plants with lower costs than that of the largest plant. An average of these percentages for all the 53 arrays shows the average position held by the largest plant with respect to the low-cost plants.

TESTS BASED ON TABLE OF RATES OF RETURN ON INVESTED CAPITAL
EARNED BY INDIVIDUAL COMPANIES

In the 84 tests made for the rates of return on invested capital earned by individual companies in 18 industries, the largest company showed the highest rate of return only 12 times.

In 2 of the 84 tests a large company, although not the largest, showed the highest rate of return.

In 57 of the 84 tests a company classified as medium-sized showed the highest rate of return.

In 13 of the tests a company classified as small showed the highest rate of return.

On the average about one-third of the total number of companies in each test showed higher rates of return than the largest company.

TESTS BASED ON TABLES OF RATES OF RETURN EARNED ON INVESTED
CAPITAL BY GROUPS OF COMPANIES

In a total of 21 tests of rates of return on invested capital earned by companies grouped as large, medium-sized, or small, the group containing the largest companies had the lowest average costs in 3 tests.

In 14 of the 21 tests, the group containing the companies classified as medium-sized had the lowest average cost.

In 4 of the 21 tests the group containing companies classified as small in size had the lowest average cost.

The number of companies covered in the tables showing rates of return on invested capital was not so complete as the Commission would have wished. This applies especially to the small companies. The sources for these data—chiefly reports of the Federal Trade Commission and publications of the Securities and Exchange Commission—covered for the most part only large and medium-sized companies. Financial data on small companies, adequate for the purpose at hand, are hard to find even in the most comprehensive industrial manuals.

There is reason to believe that, had the rates of return for more smaller companies been available, the percentage of times in which the large corporation showed the best rate of return would have been considerably reduced.

Doctor William Leonard Crum has lately analyzed returns on invested capital earned by groups of companies of different size.⁶ Dr. Crum has used data published by the Bureau of Internal Revenue in "Statistics of Income." Dr. Crum's study shows that when all corporations, profitable as well as unprofitable, are considered, small corporations earn relatively poor rates of return on invested capital, but when only profitable corporations of all sizes are analyzed, the highest rates of return on invested capital are earned by the smallest corporations.

The larger rates of return earned by many small corporations may possibly be explained by their more effective use of capital. Data in "Statistics of Income" clearly indicate that small corporations, whether profitable or unprofitable, turn over their capital during the

⁶ Corporate Size and Earning Power, Harvard University Press, 1939.

year more often than do medium-sized corporations, and that medium-sized corporations, turn over their capital more often than do large corporations.

SUMMARY

In the 233 combined tests, large size, whether represented by a corporation, a plant, a group of corporations, or a group of plants, showed the lowest cost or the highest rate of return on invested capital in only 25 tests. In these combined tests, medium size made the best showing in 128 tests and small size in 80 tests. Thus, large size was most efficient, as efficiency is here measured, in approximately 11 percent of the total tests, medium size was most efficient in approximately 55 percent of the tests, and small size was most efficient in approximately 34 percent of the tests.

INTRODUCTORY STATEMENT TO TABLES

Before submitting the basic tables of this study, it is important to consider the purposes of those tables and what conclusions may be safely deduced therefrom. Comparison of unit costs of production of the various plants and companies in an industry has often been employed, both by industry and the Government, in measuring efficiency. One of the principal functions of a cost accountant in a large multiple-plant company is the demonstration of the relative efficiency of the various plants through such unit cost comparisons.

In many industries today there exists a supercorporation which is appreciably larger than the next largest corporation in the industry. This was found to be true in most of the 18 industries which the Commission included in the present inquiry. If assets be taken as the measure of size, the difference between the largest corporation and the second or third largest corporation in the industries studied by the Commission was usually very considerable.¹ For instance, in the automobile industry, General Motors Corporation is more than twice the size of the Ford Motor Co. and more than eight times as large as the Chrysler Corporation, which is the third largest motor corporation.² In the iron and steel industry the United States Steel Corporation is nearly three times as large as the Bethlehem Steel Corporation, the second largest in the industry. In farm machinery, the International Harvester Corporation is nearly four times larger than the Allis-Chalmers Manufacturing Co., the second largest corporation, and nearly four times as large as Deere & Co., the third largest corporation.³ In the petroleum industry the Standard Oil Co. of New Jersey is more than twice as large as the Socony-Vacuum Oil Co., and nearly three times as large as the Standard Oil Co., of Indiana, the third largest corporation. In the sugar refining industry the American Sugar Refining Co. is more than four times as large as the National Sugar Refining Co., the second largest corporation in the industry. In beet sugar refining the Great Western Sugar Co. is nearly three times as large as the Holly Sugar Co., the second largest corporation. In milk and milk products the Borden Co., the second largest, is only 63 percent as large as the National Dairy Products Corporation. In flour milling, General Mills, Inc., is twice as large as the Pillsbury Flour Milling Co., the second largest corporation. In chemicals, the E. I. duPont de Nemours Co. is nearly three times as large as the Union Carbide & Carbon Corporation, the second largest in the industry. In bread baking, Ward Baking Corporation, the second largest, is only two-thirds as large as the Continental Baking Corporation, the largest in the industry. One of the fundamental purposes of the Commission's present inquiry was to throw

¹ Assets taken for the year 1937 from Poor's Manual for 1938.

² When total invested capital in the automobile business is used as a measure of size, again General Motors and Ford show up as far larger than Chrysler.

³ When total invested capital in the farm machinery business alone is used as a measure of size, the International Harvester Co. is still more than twice as large as Deere & Co., the second largest corporation in the industry, on this basis.

some light on the extent to which largest corporations have been able to reduce their costs below those of medium sized and small corporations.⁴

The tables showing costs of plants and companies of different size and those showing rates of return on invested capital earned by companies of different size have for their first purpose, therefore, an examination of the records of supercorporations in a number of industries. If in the tests these largest corporations had almost invariably achieved the lowest costs and the best rates of return, the conclusion would be warranted that such corporations were efficient according to these fundamental tests which businessmen so respect. But if the largest corporations made a relatively poor showing in the tests there might still be the possibility that large corporations, but not supercorporations, would be considered the most efficient. In order to throw some light on the possibility that large size, but not supersize, insures efficiency in industry, the Commission divided plants and companies under consideration into size classifications of large, medium sized, and small.

The classification of plants and companies into these three categories of size necessarily involves judgment and might therefore be criticized as nonobjective. Where is the limit between a large and a medium-sized corporation or between a medium-sized and a small corporation? The largest-sized plants and companies in some industries for example, may be smaller by most standards than the medium-sized plants and companies in other industries. And even among the largest corporations there will be differences of stature. It is evident that a different classification of size is needed for every industry, since size is relative to the industry. Consequently, it should be noted that the basis of such classification for each industry and for each cost table is carefully set forth for the scrutiny and consideration of any who may be interested in ascertaining the statistical basis for the Commission's study. The size of every plant and company, as measured by quantity of production or size of investment, was first set forth in a table. The lines used for the three classifications were put where a considerable break in the series was noted. For example, an attempt was made to draw the line between large and medium-sized corporations in such a way that the smallest large corporation was considerably larger than the largest medium-sized corporation.

If it be urged that a company designated as medium sized in this inquiry is considered in its particular industry as a large company, it can be answered that the industry's designation is just as subjective as that used by the Commission. The important point, however, is that if such corporation, classified as medium sized by the Commission, is appreciably less in size than the largest corporation, or appreciably less in size than at least several corporations in its industry, and has in a series of tests involving different time periods shown lower costs and higher rates of return on invested capital, the contention that the largest company in that industry is the most efficient company is less convincing, irrespective of how the medium-sized corporation is classified. The categories of size were so constructed that for a medium-sized or small corporation to score highest in a test meant that there was a very considerable difference in size between

⁴ The 18 industries in the present inquiry were selected solely on the basis of the existence of adequate data concerning them. A number of other industries were rejected by the Commission because cost data and data enabling the computation of rates of return on invested capital were regarded as inadequate.

such corporation and the largest corporation of its industry, or indeed the four or five largest corporations in its industry. Gaps between the large and the medium and between the medium and the small are so distinct that it seems difficult to object fundamentally to the categories that have been established. To a more limited degree this same principle was utilized in the division of plants into large, medium, and small.

It is important to emphasize that the tables showing individual costs for companies and rates of return for individual companies in various industries were not intended to measure another important aspect of business efficiency. More effective performance in the tests by corporations classified as medium-sized or small would have still left untouched the question of whether large size on the average was more or less efficient than medium size or small size on the average. In considering business efficiency from this standpoint, the Commission prepared other tables in which companies or plants were grouped according to size, and the average cost or rate of return for each group was determined and compared. The Commission was able to make 11 cost tests for groups of companies classified as large, medium-sized or small; 5 tests for groups of plants classified as large, medium-sized or small; and 21 tests of the rate of return for companies grouped as large, medium-sized or small. Thus the Commission made 37 tests designed to throw light on the issue of whether large size on the average is more or less efficient than medium size or small size.

The Commission realizes the difficulties involved in obtaining accurate costs of production for plants and companies, and is not unaware of the controversies which such cost data usually involve. The cost data, however, as has been pointed out, were obtained largely from the files of United States Tariff Commission and those of the Federal Trade Commission. Both of these agencies over a number of years have had extensive experience in the making of cost studies. Both the United States Tariff Commission and the Federal Trade Commission in making cost studies invariably are careful to take account of unusual or vitiating factors which temporarily may produce a distorted picture of costs in an industry for individual plants or companies. Where such factors do exist, it has been the long-established policy of both agencies to make the necessary adjustments to insure comparability. In some cases, the United States Tariff Commission has terminated an investigation of costs because of the fact that the situation was so unusual and the factors so abnormal that comparability could not be achieved.

In considering what conclusions are admissible from the cost tests conducted by the Federal Trade Commission, it should be borne in mind that the Commission has taken the position that it does not attempt to explain the factors which may account for the more effective performance of medium-sized and even small companies in some industries. There is reason, however, to believe that size may have been the most significant factor in the results.

In industry there are many factors which may account for the lower costs of one concern in comparison with another, or the higher rate of return of one industrial unit as compared with another. Such factors as location, degree of mechanization, degree of operating capacity, sex of labor, skill of labor, wages, and accidental conditions

such as strikes, floods, storms, shifting centers of population, depletion of natural resources, climate and other influences may crucially affect at any one time costs of production and rates of return of particular plants and companies. Whether size and size alone, rather than other factors, happens to explain the more effective performance of companies and plants classified as medium-sized or small in the tests conducted by the Commission cannot be definitely determined. But the Commission believes that there may be considerable warrant for the conclusion that the factor of size may well have been a very significant influence in the results of the tests.

The factors which affect costs of production and rates of return on invested capital in industry can be divided into two classes. The first includes conditions over which corporate management has substantial control. Some of such factors are degree of mechanization, initiative in using patented devices, promotion of the skill of workers, ability to bargain with workers, location of plants, prudence and soundness of capital structures, and effectiveness in utilizing full operating capacity. The other group consists of factors which are beyond the control of corporate management. Some examples of such factors would be a shift in the centers of population, exhaustion of natural resources, changes in consumers' tastes, government policies, storms and floods.

It would be unreasonable to assume that the more effective performance of medium-sized and small business units in many industries could be solely the result of factors which lay beyond the control of management. Such factors are likely to affect all enterprises, regardless of size, and are not likely to be statistically biased in favor of any one size classification as against another.

Concerning factors affecting costs of production and rates of return on invested capital which are within the control of corporate management, it seems reasonable to believe that such factors are vitally affected by the degree of effectiveness of corporate management. The degree of effective management, in turn, may be vitally affected by the factor of size. In considering the factors over which management has substantial control and which affect costs of production and rates of return on invested capital, two deserve special attention. If it were true that the largest companies invariably paid better wages than those of medium or small size, the lower costs of companies of medium and small size might be said to be accounted for by the wage scale of the largest companies. From data obtained by the Commission from other agencies, there is no evidence that the largest companies in general pay better wages than those of medium or small size. Indeed, the data available fail completely to corroborate this proposition. It appears from the existing data that medium size or small size as often pay better wages than large size corporations.⁵

But even if it were demonstrated that large size in general paid better wages than medium-sized or small-sized corporations, there are other elements to be considered. There is considerable warrant

⁵ The Commission computed the average annual worker income of the 4 largest, the 4 next largest, and of the other companies in all of the industries for which it presented cost tables. The Commission selected some 14 other industries of great importance for which it had presented no cost tables. These figures for average annual worker incomes were derived from an analysis of the Census of Manufactures for 1935 made by Dr. Gardner Means. This comparison showed that in many of the important industries considered by the Commission, the 4 largest companies did not afford the workers the highest average annual incomes. In some industries the 4 next-largest companies and in other industries those companies smaller than the first 8 companies paid as a group the highest average annual incomes.

for believing that very large size in American industry often enjoys certain advantages which affect cost of production and rate of return on invested capital, which are not enjoyed by medium-sized or small-sized corporations. As a partial enumeration of such advantages, very large corporations, having the greatest resources and the best access to capital markets, are in a better position to have the most up-to-date technological equipment, to own the best patents, to enjoy stronger financial and trade contacts which produce business, to possess a greater bargaining power with the producers of their raw materials and with their distributors, to obtain preferential treatment in connection with transportation,⁶ to have greater advertising power, to have better cost accounting systems, to more effectively contact prospective buyers for orders, to afford superior research facilities than corporations of far less size classified as medium sized or small. Consequently, if there were a differential in the wage rate against large size, this disadvantage to superbigness is at least somewhat offset by numerous other advantages which medium size or small size cannot command in industrial life. As has been pointed out elsewhere, however, it should be noted that a number of the advantages accruing to very large size in business may be inconsistent with the effective maintenance of free and fair competition and other aspects of the public interest.

In the cost tables submitted by the Commission, no consideration is given to the question of whether any adjustment was made for differences in operating ratios⁷ of the concerns whose costs were being measured. This was not done for two reasons. In the first place, the technique of a cost investigation conducted by the United States Tariff Commission or the Federal Trade Commission generally takes into consideration this factor and makes adjustments where operating capacity is unusually abnormal.

In the second place, although it is well known that the operating ratio of a factory or a mill affects its cost of production, it is possible to overestimate the effect of these operating ratios. Also, it must be realized that low operating ratios are not always the peculiar misfortune of large size. Indeed, from certain data studied by the Commission, low operating ratios were frequently found in efficient plants of medium and small size. A special analysis of cement plant costs for 1928, 1929, and 1930 was undertaken because adequate information about operating ratios for such plants was in existence. Alongside of every unit cost, the operating ratio of the plant was placed. The figures showed no indication that the operating ratios were an important factor in explaining the differences in cost between large, medium-sized, and small cement mills. Twelve of the lowest-cost mills, all medium-sized, operated at capacities of from 64 to 90 percent. In short, some of the lowest-cost mills, all medium-sized, were operating considerably below capacity. One of the lower-cost large mills (No. 15, table 1), was operating below normal capacity in 1928, 1929, and 1930. The other low-cost large mill (No. 14) was operating practically to capacity in 1929, and over 90 percent in 1928 and 1930. In short, it is possible to overrate the effect of operating ratio on the cost of various sized plants.

⁶ Percent of total capacity utilized.

⁷ Percent of total capacity utilized.

Finally, the effectiveness of the factor of operating ratios as an explanation of cost behavior in the tables submitted by the Commission is heavily discounted by the fact of the numerousness of the tests, involving many time periods. Considering the quantity of the tests and the variety of time periods which they cover, it would seem reasonable to conclude that if large size was so invariably handicapped by low operating ratios, such operating ratios were in turn a serious indication of inefficient operation, involving the burdening of the large corporations with unused capacity.

CEMENT COST TABLES

Tables 1, 2, 3, 4, and 5 show costs of producing a barrel of cement. All the costs are for the year 1929.

All are costs of individual mills or individual companies, as distinguished from average costs, for groups of companies.

Every mill or company is identified by some size classification.

Size classification for mills (table 1) is based on production in 1929.

Large mills.—Those with production over 2,000,000 barrels.

Medium-sized mills.—Those with production between 1,000,000 and 2,000,000 barrels.

Small mills.—Those with production of 1,000,000 barrels or under.

Rank of plant (tables 3, 4, and 5) according to production: Plant with largest production in 1929 is given rank 1, plant with next largest production in 1929 is given rank 2, etc.

Size classification for companies (tables 3, 4, and 5) as follows: Big Five companies—Universal Atlas Cement Co., Lehigh Portland Cement Co., Lone Star Cement Corporation, Penn-Dixie Cement Corporation, and Alpha Portland Cement Co.

Size classification for companies (table 2):

Large companies.—Universal Atlas Cement Co., Lehigh Portland Cement Co., Lone Star Cement Corporation.

Medium-sized companies.—Penn-Dixie Cement Corporation, Alpha Portland Cement Co., Ideal Cement Co., Medusa Portland Cement Co.

Small companies.—Those with production in 1929 between 2,000,000 and 4,000,000 barrels.

Very small companies.—Those with production in 1929 under 2,000,000 barrels.

TABLE 1.—Costs per barrel of 102 cement plants in 1929, arranged in order of ascending costs ¹

Classification of plants according to size	Cost per barrel	Classification of plants according to size	Cost per barrel
1. Medium.....	\$0.88	52. Large.....	\$1.29
2. Medium.....	.90	53. Small.....	1.30
3. Medium.....	.91	54. Medium.....	1.31
4. Medium.....	.92	55. Medium.....	1.31
5. Medium.....	.95	56. Small.....	1.33
6. Medium.....	.96	57. Large.....	1.33
7. Medium.....	.96	58. Small.....	1.33
8. Medium.....	.96	59. Small.....	1.33
9. Medium.....	1.00	60. Medium.....	1.34
10. Medium.....	1.02	61. Small.....	1.34
11. Medium.....	1.03	62. Medium.....	1.35
12. Medium.....	1.04	63. Medium.....	1.35
13. Medium.....	1.05	64. Small.....	1.37
14. Large.....	1.07	65. Small.....	1.37
15. Large.....	1.07	66. Small.....	1.37
16. Medium.....	1.07	67. Small.....	1.37
17. Small.....	1.07	68. Medium.....	1.38
18. Small.....	1.08	69. Small.....	1.39
19. Small.....	1.11	70. Medium.....	1.39
20. Large.....	1.13	71. Small.....	1.39
21. Large.....	1.13	72. Small.....	1.40
22. Medium.....	1.13	73. Small.....	1.40
23. Small.....	1.14	74. Small.....	1.41
24. Small.....	1.14	75. Small.....	1.41
25. Large.....	1.15	76. Small.....	1.41
26. Large.....	1.15	77. Small.....	1.41
27. Medium.....	1.15	78. Small.....	1.42
28. Medium.....	1.15	79. Small.....	1.46
29. Medium.....	1.16	80. Small.....	1.47
30. Medium.....	1.16	81. Small.....	1.47
31. Medium.....	1.18	82. Medium.....	1.49
32. Small.....	1.18	83. Medium.....	1.50
33. Small.....	1.19	84. Small.....	1.50
34. Large.....	1.19	85. Medium.....	1.50
35. Large.....	1.19	86. Small.....	1.51
36. Small.....	1.19	87. Small.....	1.53
37. Medium.....	1.19	88. Small.....	1.59
38. Medium.....	1.20	89. Small.....	1.61
39. Medium.....	1.22	90. Small.....	1.63
40. Medium.....	1.23	91. Small.....	1.65
41. Small.....	1.23	92. Small.....	1.66
42. Small.....	1.23	93. Small.....	1.68
43. Small.....	1.24	94. Small.....	1.68
44. Medium.....	1.25	95. Small.....	1.75
45. Small.....	1.26	96. Small.....	1.76
46. Medium.....	1.26	97. Small.....	1.77
47. Medium.....	1.26	98. Small.....	1.90
48. Medium.....	1.27	99. Small.....	1.92
49. Medium.....	1.28	100. Small.....	2.00
50. Small.....	1.28	101. Small.....	2.17
51. Medium.....	1.28	102. Small.....	2.18

¹ Costs include packing and shipping charges and imputed interest but no outward freight, nor selling expense.

Source: Files of the United States Tariff Commission.

COMMENTS ON TABLE 1

(a) Thirteen medium-sized mills had lower costs than the lowest-cost large mill.

(b) Not one of the 13 lowest-cost mills belonged to the largest company, but a few belonged to the other two companies classified as large.

(c) Most of the highest-cost mills were small.

(d) Seven of the 25 highest-cost mills belonged to 3 companies classified as large.

(e) One of the lower-cost large mills (No. 15) was operating below normal capacity in 1928, 1929, and 1930. The other low-cost large mill (No. 14) was operating practically to capacity in 1929, and over 90 percent in 1928 and 1930.

(f) Twelve of the lowest-cost mills (all medium-sized) operated at capacities varying from 64 to 90 percent.

(g) The highest-cost large mill (No. 57) operated at 79 percent in 1928, 63 percent in 1929, and 60 percent in 1930.

TABLE 2.—Costs per barrel of 45 cement companies in 1929, arranged in order of ascending costs ¹

Classification of companies according to size	Cost per barrel	Classification of companies according to size	Cost per barrel
1. Very small.....	\$0.91	24. Very small.....	\$1.28
2. Small.....	.99	25. Small.....	1.28
3. Very small.....	1.02	26. Very small.....	1.29
4. Very small.....	1.05	27. Very small.....	1.31
5. Very small.....	1.13	28. Very small.....	1.31
6. Medium.....	1.14	29. Large.....	1.32
7. Very small.....	1.14	30. Small.....	1.33
8. Small.....	1.15	31. Very small.....	1.33
9. Very small.....	1.16	32. Small.....	1.34
10. Medium.....	1.18	33. Very small.....	1.35
11. Large.....	1.18	34. Very small.....	1.38
12. Very small.....	1.19	35. Medium.....	1.41
13. Large.....	1.19	36. Very small.....	1.50
14. Small.....	1.19	37. Very small.....	1.51
15. Very small.....	1.19	38. Very small.....	1.53
16. Medium.....	1.19	39. Very small.....	1.54
17. Very small.....	1.20	40. Very small.....	1.59
18. Very small.....	1.22	41. Very small.....	1.65
19. Very small.....	1.23	42. Very small.....	1.76
20. Very small.....	1.23	43. Very small.....	1.90
21. Very small.....	1.26	44. Very small.....	2.00
22. Very small.....	1.27	45. Very small.....	2.17
23. Very small.....	1.28		

¹ Costs include packing and shipping charges and imputed interest but no outward freight.

Source: Files of the United States Tariff Commission.

COMMENTS ON TABLE 2

(a) Ten medium-sized or small companies had lower costs than the lowest-cost large company.

(b) Twenty-eight companies (including only two large companies) had lower costs than the highest-cost large company.

TABLE 3.—Costs of cement plants in Lehigh Valley in 1929, arranged in order of ascending cost per barrel

Big Five or independent	Rank ¹	Percent of capacity utilized	Cost per barrel	Net mill price received per barrel	Margin per barrel ²
Big Five.....	7	87	\$0.88	\$1.32	\$0.44
Do.....	6	86	.90	1.28	.38
Independent.....	(³)	87	.91	1.46	.55
Big Five.....	8	97	.92	1.31	.39
Do.....	15	79	.95	1.31	.36
Do.....	12	81	1.00	1.31	.31
Independent.....	10	64	1.02	1.43	.41
Big Five.....	(³)	61	1.07	1.34	.27
Do.....	18	81	1.11	1.32	.21
Do.....	(³)	73	1.13	1.31	.18
Independent.....	(³)	63	1.13	1.49	.36
Do.....	(³)	94	1.15	1.47	.32
Do.....	13	75	1.19	1.39	.20
Do.....	14	83	1.20	1.51	.31
Do.....	19	67	1.24	1.31	.07
Big Five.....	16	98	1.30	1.31	.01
Independent.....	11	63	1.31	1.32	.01
Do.....	17	86	1.33	1.63	.30
Do.....	20	53	1.37	1.31	-.06
Do.....	9	60	1.50	1.36	-.14

¹ Rank in size indicated by number. For example, 1 was the plant with the largest production in barrels.

² Not profit, since costs include imputed interest but no selling expense.

³ Disclosure of rank of this plant might disclose its identity.

Source: Files of the United States Tariff Commission.

COMMENTS ON TABLE 3

(a) In Lehigh Valley lowest-cost mill of the 20 covered was seventh largest mill; next to lowest-cost mill was sixth largest mill.

(b) None of the lowest-cost mills belonged to the largest company.

(c) Large companies had some low-cost, some average-cost, and some high-cost mills.

(d) Best net mill prices realized by mills of small companies, suggesting that the costs of distributing their cement were smaller than the costs of distributing the cement of the larger companies.

TABLE 4.—Costs of cement plants in the Lake States in 1929, arranged in order of ascending cost per barrel

Big Five or independent	Rank ¹	Percent of capacity utilized	Cost per barrel	Net mill price received per barrel	Margin per barrel ²
Big Five.....	(³)	90	\$0.96	\$1.49	\$0.53
Independent.....	6	82	.96	1.60	.64
Do.....	(³)	90	1.05	1.28	.23
Do.....	10	89	1.07	1.63	.56
Do.....	11	89	1.07	1.49	.42
Big Five.....	(³)	69	1.15	1.48	.33
Independent.....	17	92	1.23	1.58	.35
Do.....	(³)	95	1.23	1.51	.28
Big Five.....	7	60	1.25	1.49	.24
Independent.....	9	66	1.27	1.47	.20
Do.....	18	68	1.28	1.46	.18
Big Five.....	(³)	63	1.29	1.42	.13
Independent.....	15	93	1.33	1.52	.19
Do.....	8	86	1.35	1.63	.28
Do.....	20	63	1.37	1.46	.09
Do.....	13	75	1.39	1.61	.22
Do.....	14	46	1.47	1.54	.07
Big Five.....	16	59	1.50	1.50	.00
Independent.....	12	79	1.51	-----	-----
Big Five.....	19	57	1.68	1.53	-.15

¹ Rank in size indicated by number. For example, 1 was the plant with the largest production in barrels.

² Not profit, since costs include imputed interest but no selling expense.

³ Disclosure of rank of this plant might disclose its identity.

Source: Files of the United States Tariff Commission.

COMMENTS ON TABLE 4

- (a) In Lake States lowest costs were not those of the largest mills.
 (b) Lowest-cost mills were not those of the large companies.
 (c) Best net mill prices realized by mills of small companies, suggesting that the costs of distributing their cement were smaller than the costs of distributing the cement of the larger companies.

TABLE 5.—Costs of cement plants in the southeastern section in 1929, arranged in order of ascending cost per barrel

Big Five or independent	Percent of capacity utilized	Cost per barrel	Net mill price received per barrel	Margin per barrel ¹
Independent.....	100	\$1.14	\$1.26	\$0.12
Big Five.....	55	1.15	1.16	.01
Do.....	.61	1.18	1.13	-.05
Independent.....	68	1.19	1.12	-.07
Do.....	46	1.23	-----	-----
Big Five.....	53	1.34	1.09	-.25
Do.....	67	1.41	1.22	-.19
Do.....	48	1.42	1.12	-.30
Do.....	87	1.63	1.56	-.07
Independent.....	49	1.65	-----	-----

¹ Not profit, since costs include imputed interest but no selling expense.

Source: Files of the United States Tariff Commission.

COMMENTS ON TABLE 5

- (a) In southeastern section, lowest-cost mill was fairly small and belonged to a small company.
 (b) Certain big-five mills, belonging to one of the large companies, had quite high costs.

IRON AND STEEL COST TABLES

Tables 6 and 7 give the pig-iron costs of different plants of the United States Steel Corporation in 1910.

Tables 8 and 9 give the steel-ingot costs of different plants of the United States Steel Corporation in 1910.

Tables 10, 11, and 12 give the pig-iron costs of merchant iron companies and integrated steel companies during the war period (1916 and 1918).¹

Size classifications for plants of the United States Steel Corporation (tables 6, 7, 8, 9) are based on 1910 production:

Large plants.—Over 450,000 tons.

Medium-sized plants.—300,000 to 450,000 tons.

Small plants.—150,000 to 300,000 tons.

Very small plants.—Under 150,000 tons.

Ranks of companies (table 10) based on 1916 production. Thus, merchant company with largest production of pig iron given rank 1, etc.

Size classifications for integrated steel companies in 1918 (table 11):

Large companies.—United States Steel Corporation and companies later absorbed by the Bethlehem Steel Corporation.

Medium-sized companies.—Republic Iron & Steel Co., Youngstown Sheet & Tube Co., Jones & Laughlin Steel Co., Inland Steel Co., Colorado Fuel & Iron Co., McKinney Steel Co.

Small companies.—Other companies covered.

TABLE 6.—Book furnace costs of basic pig iron (northern furnaces) in 1910 for different sizes of plants of the United States Steel Corporation, arranged in order of ascending costs

Classification of plants according to size of production	Furnace cost per gross ton	Classification of plants according to size of production	Furnace cost per gross ton
1. Medium.....	\$11.94	10. Very small.....	\$13.94
2. Very small.....	12.14	11. Small.....	14.06
3. Large.....	12.41	12. Large.....	14.22
4. Small.....	12.59	13. Very small.....	14.42
5. Small.....	13.06	14. Very small.....	14.63
6. Small.....	13.13	15. Very small.....	15.70
7. Large.....	13.21		
8. Very small.....	13.38		
9. Medium.....	13.78	Average.....	13.20

Source: Bureau of Corporations.

COMMENTS ON TABLE 6

(a) Lowest-cost plant was medium in size.

(b) Of three large plants one had a fairly low cost, one had an average cost, and one had a quite high cost.

¹ Financial data for later years to be presented in tables to follow.

TABLE 7.—*Book furnace costs of Bessemer pig iron in 1910 for different sizes of plants of the United States Steel Corporation, arranged in order of ascending costs*

Classification of plants according to size of production	Furnace cost per gross ton	Classification of plants according to size of production	Furnace cost per gross ton
1. Large.....	\$12.78	13. Small.....	\$14.78
2. Medium.....	12.79	14. Very small.....	14.87
3. Large.....	13.21	15. Large.....	14.88
4. Large.....	13.33	16. Very small.....	15.19
5. Large.....	13.34	17. Very small.....	15.19
6. Large.....	13.74	18. Very small.....	15.69
7. Very small.....	14.13	19. Very small.....	16.34
8. Small.....	14.19	20. Very small.....	16.52
9. Very small.....	14.27	21. Very small.....	16.68
10. Large.....	14.39		
11. Very small.....	14.43	Average.....	13.89
12. Medium.....	14.46		

Source: Bureau of Corporations.

COMMENTS ON TABLE 7

- (a) A large plant had lowest cost (\$12.78).
 (b) A medium-sized plant had the next lowest cost (\$12.79).
 (c) Most large plants had low costs, but some had average costs, and two had costs above the average.

TABLE 8.—*Book works costs of basic open-hearth ingots (northern works) for each of the works of the United States Steel Corporation in 1910, arranged in order of ascending costs*

Classification of plants according to size of production	Book works costs per gross ton ¹	Classification of plants according to size of production	Book works costs per gross ton ¹
1. Medium.....	\$15.74	13. Large.....	\$17.69
2. Large.....	15.86	14. Very small.....	17.82
3. Large.....	16.43	15. Very small.....	17.88
4. Medium.....	16.50	16. Small.....	17.91
5. Small.....	16.81	17. Medium.....	18.23
6. Medium.....	16.81	18. Large.....	18.24
7. Large.....	16.82	19. Very small.....	18.42
8. Large.....	16.83	20. Small.....	19.93
9. Large.....	16.90	21. Very small.....	20.72
10. Medium.....	17.32	22. Very small.....	22.40
11. Large.....	17.32		
12. Very small.....	17.50	Average.....	17.19

¹ Does not include general expense, depreciation, or imputed interest.

Source: Bureau of Corporations.

COMMENTS ON TABLE 8

(a) Medium-sized plant of the United States Steel Corporation had the lowest cost of basic open-hearth ingots shown by any of the northern works of the corporation.

(b) Some large plants had low costs, some had average costs, and three large plants had costs above the average.

TABLE 9.—*Book works costs per gross ton of Bessemer billet ingots for different sizes of plants of the United States Steel Corporation in 1910, arranged in order of ascending costs*

Classification of plants according to size of production	Book works costs per gross ton ¹	Classification of plants according to size of production	Book works costs per gross ton ¹
1. Large.....	\$15.48	9. Medium.....	\$17.32
2. Medium.....	15.64	10. Very small.....	17.68
3. Medium.....	15.76	11. Medium.....	18.09
4. Very small.....	16.11	12. Small.....	18.50
5. Large.....	16.20	13. Very small.....	18.76
6. Large.....	16.21		
7. Medium.....	16.99	Average.....	16.63
8. Large.....	17.32		

¹ Does not include general expense, depreciation, or imputed interest.

Source: Bureau of Corporations.

COMMENTS ON TABLE 9

(a) Large plant of the United States Steel Corporation had the lowest cost of Bessemer billet ingots shown by any of the corporation's plants covered in the table.

(b) Only one large plant had a cost above the average.

TABLE 10.—*Costs of producing a ton of pig iron by merchant companies of different size in 1916, arranged in order of ascending costs*¹

Location of producer	Company's rank in production ²	Costs per ton	Location of producer	Company's rank in production ²	Costs per ton
Alabama.....	3	\$11.40	Ohio.....	5	\$14.84
Do.....	11	11.80	Tennessee.....	12	15.08
New York.....	1	12.03	Illinois.....	4	15.17
Tennessee.....	10	13.13	New York.....	7	16.03
Wisconsin.....	6	13.30	Virginia.....	9	16.60
Virginia.....	14	13.60	Pennsylvania.....	13	16.97
Michigan.....	8	13.71			
Pennsylvania.....	2	13.98	Average.....		13.71

¹ Costs include overhead expenses but no interest.

² Thus, the company with the largest production has cost rank 1, etc.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 10

(a) Lowest pig iron costs for merchant companies in 1916 were those of two companies in Alabama: one a fair-sized company, and one a small company.

TABLE 11.—*Costs of producing a ton of basic pig iron by integrated steel producers of different size, February through December 1918, arranged in order of ascending costs*¹

Size classification of company in steel industry as a whole	Rank of company in pig iron production ²	Costs per ton	Size classification of company in steel industry as a whole	Rank of company in pig iron production ²	Costs per ton
Medium.....	10	\$17.96	Medium.....	12	\$23.23
Do.....	7	18.93	Do.....	4	23.88
Large.....	1	19.27	Large.....	3	24.03
Medium.....	9	20.59	Small.....	14	24.24
Large.....	5	20.83	Do.....	8	26.85
Small.....	11	20.84	Large.....	2	27.64
Do.....	13	20.99			
Medium.....	6	21.91	Average.....		21.02

¹ Costs include neither general administrative expense, selling, nor interest.² Thus, the company with the largest production has rank 1, etc.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 11

- (a) Lowest costs of pig iron in 1918 were those of two medium-sized integrated steel companies.
- (b) The United States Steel Corporation had the third lowest cost.
- (c) The companies of the Bethlehem group had relatively high costs.

TABLE 12.—*Costs of producing a ton of Bessemer pig iron by integrated steel producers of different size, February through December 1918, arranged in order of ascending costs*¹

Size classification of company in steel industry as a whole	Rank of company in pig iron production ²	Costs per ton	Size classification of company in steel industry as a whole	Rank of company in pig iron production ²	Costs per ton
Medium.....	3	\$21.26	Large.....	4	\$24.30
Large.....	1	21.76	Medium.....	6	24.53
Do.....	8	21.94	Large.....	5	30.26
Medium.....	2	22.17			
Small.....	7	22.96	Average.....		22.56
Medium.....	9	23.71			

¹ Costs include neither general administrative expense, selling, nor interest.² Thus, the company with the largest production has rank 1, etc.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 12

- (a) A medium-sized integrated steel producer had the lowest cost of Bessemer pig iron in 1918.
- (b) The United States Steel Corporation had the second lowest cost.
- (c) The Bethlehem group had relatively high costs.

FARM MACHINERY COST TABLES

Tables 13, 15, 17, 19, 21, and 23 give costs of two-to three- and three-to four-plow tractors, costs of combines (per pound), costs of grain binders (per pound), costs of 14-inch, two-base tractor-gang plows (per pound), costs of tractor-mounted two-row cultivators (per pound), costs of riding cultivators (per pound) for certain manufacturers in 1935 and 1936. The costs include no interest charges.

Machines of different manufacturers often vary substantially in weight. For this reason, farm-machinery manufacturers often compare costs per pound rather than costs per machine.

Tables 14, 16, 18, 20, 22, and 24 give percentages based on the prices and profits (prices minus costs) for two- to three- and three- to four-plow tractors, combines, grain binders, 14-inch, two-base tractor-gang plows, tractor-mounted two-row cultivators, riding cultivators for certain manufacturers in 1935 and 1936.

These tables are used for this industry because its products compared vary in size, weight, and quality. Cost of a heavy farm machine with special attachments may bring a relatively high price and have a relatively high cost when compared with other machines of the same type. Knowledge of the different prices charged by different manufacturers for the same type of machines affords a basis for determination of validity of the cost comparison. Where prices of different manufacturers vary too much, the cost comparisons are of less value. Profits, the difference between prices and costs—especially where prices do not vary substantially—give some clue as to the success of different manufacturers in the production and sale of the particular products compared.

If actual prices were used, they might disclose the identities of particular manufacturers because of their published price lists. Therefore, both prices and profits (prices minus costs) are shown only as relatives, or percentages. The highest profit shown for any machine is considered 100 and the profits on other machines are shown as relatives, or percentages, of 100. The price of the machine on which the highest profit is shown is also considered 100, and the prices of other machines are shown as relatives, or percentages of 100.

Costs are company costs as distinguished from plant costs, and include selling expense but no interest.

Size classification of companies:

Large.—The International Harvester Co.

Medium-sized.—Deere & Co., Allis-Chalmers Manufacturing Co., and J. I. Case.

Small companies.—All other long-line and short-line companies.

TABLE 13.—Costs of steel-wheel tractors for different companies in 1935 and 1936, arranged in order of ascending costs

TRACTORS (2 TO 3 PLOWS)

Size classification of company	Cost per tractor	Size classification of company	Cost per tractor
1935		1936	
Medium.....	\$523.06	Medium.....	\$470.52
(1).....	542.68	Do.....	473.68
(1).....	558.64	Small.....	510.70
Small.....	644.70	(1).....	515.92
		(1).....	554.09
		Small.....	612.78
		Do.....	731.42

TRACTORS (3 TO 4 PLOWS)

1935		1936	
Medium.....	\$564.08	Medium.....	\$510.72
Do.....	605.91	Do.....	551.15
Do.....	639.68	Do.....	611.85
(1).....	667.55	(1).....	653.92
(1).....	685.64	(1).....	656.07
(1).....	704.77	Small.....	674.08
(1).....	722.27	(1).....	695.98
Small.....	758.80	(1).....	702.06
Do.....	761.28	Small.....	711.64

¹ Disclosure of classification here would reveal the cost of the large company.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 13

(a) Certain medium-sized companies had the lowest cost of tractors in both years.

(b) The lowest-cost medium-sized companies maintained their low-cost positions in both years.

TABLE 14.—Profits, costs, and price realizations on steel-wheel tractors for manufacturers of different size in 1935 and 1936, arranged in order of decreasing profits

TRACTORS (2 TO 3 PLOWS)

[Expressed in percentages]

Size classification of company	Profit (price minus cost) ²	Price realization ³	Cost	Size classification of company	Profit (price minus cost) ²	Price realization ³	Cost
1935				1936			
Medium.....	Percent 100.0	Percent 100.0	\$523.06	Medium.....	Percent 100.0	Percent 100.0	\$470.52
(1).....	71.1	94.6	542.68	Do.....	99.7	100.3	473.68
(1).....	55.6	92.5	558.64	(1).....	84.6	101.1	515.92
Small.....	19.6	94.3	644.70	(1).....	66.5	94.3	510.70
				(1).....	62.5	99.0	554.09
				Small.....	42.8	100.5	612.78
				Do.....	13.9	107.4	731.42

See footnotes at end of table.

TABLE 14.—*Profits, costs, and price realizations on steel-wheel tractors for manufacturers of different size in 1935 and 1936, arranged in order of decreasing profits—Continued*

TRACTORS (3 TO 4 PLOWS)

Size classification of company	Profit (price minus cost)	Price realization	Cost	Size classification of company	Profit (price minus cost)	Price realization	Cost
1935				1936			
Medium.....	100.0	100.0	\$605.91	Medium.....	100.0	100.0	\$551.15
Do.....	80.1	89.3	564.08	Do.....	81.3	88.7	510.72
Do.....	68.1	94.7	639.08	Do.....	60.7	93.4	611.85
(1).....	32.3	87.5	667.55	(1).....	43.0	92.1	653.92
(1).....	25.8	92.0	722.27	(1).....	39.6	96.6	702.06
(1).....	12.6	86.1	704.77	(1).....	32.0	95.1	711.64
(1).....	9.9	92.0	761.28	Small.....	22.7	87.4	674.08
Small.....	-10.2	85.8	758.80	Do.....	17.1	88.0	695.98
Do.....	-16.8	75.4	685.64	Do.....	3.3	78.5	656.07

¹ Disclosure of classification here would reveal the cost of the large company.

² Profit on implement on which largest profit was realized is called 100 percent to avoid disclosure of manufacturer. Profits on implements of other manufacturers are shown as percentages, computed by dividing each profit by the largest profit.

³ The net price realization on the implement on which largest profit is realized is called 100 percent and, the price realizations of other manufacturers on other implements are shown as percentages, computed by dividing each price by the price designated 100 percent.

Source: Files of Federal Trade Commission.

COMMENTS ON TABLE 14

(a) Medium-sized companies that showed lowest costs in foregoing table (13) had the best profits in this table.

TABLE 15.—*Costs per pound of combines as shown for different companies in 1935 and 1936, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
1935		1936	
Medium.....	Cents 12.80	Small.....	Cents 10.37
Small.....	14.21	Do.....	11.18
Do.....	14.23	Medium.....	13.12
Medium.....	14.37	Do.....	13.24
(1).....	14.70	Small.....	13.93
(1).....	20.52	Medium.....	16.09
(1).....	21.00	(1).....	16.20
		(1).....	16.48
		(1).....	18.82

¹ Disclosure of classification here would reveal the cost of the large company.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 15

(a) Small and medium-sized companies showed the lowest costs of combines per pound.

TABLE 16.—*Profits, costs, and price realizations on combines for manufacturers of different size in 1935 and 1936, arranged in order of decreasing profits*

[Expressed in percentages]

Size classification of company	Profit (price minus cost) ²	Price realization ³	Cost	Size classification of company	Profit (price minus cost) ²	Price realization ³	Cost
1935				1936			
	<i>Percent</i>	<i>Percent</i>			<i>Percent</i>	<i>Percent</i>	
Medium.....	100.0	100.0	\$935.99	Medium.....	100.0	100.0	\$959.51
Do.....	68.3	81.2	783.24	Do.....	71.6	87.2	867.76
Small.....	9.4	138.1	1,521.57	(1).....	60.9	115.0	1,213.12
Do.....	-4.7	78.4	881.83	(1).....	55.5	86.4	891.83
(1).....	-46.8	41.3	543.82	(1).....	53.7	39.6	350.96
(1).....	-73.9	118.0	1,446.62	(1).....	40.6	79.0	835.81
(1).....	-88.3	94.2	1,206.57	Medium.....	-9.4	47.9	575.99
				Small.....	-27.2	76.8	948.14
				Do.....	-64.8	89.8	1,174.49

¹ Disclosure of classification here would reveal the cost of the large company.² Profit on implement on which largest profit was realized is called 100 percent to avoid disclosure of manufacturer. Profits on implements of other manufacturers are shown as percentages, computed by dividing each profit by the largest profit.³ The net price realization on the implement on which largest profit is realized is called 100 percent, and the price realizations of other manufacturers on other implements are shown as percentages, computed by dividing each price by the price designated 100 percent.

Source: Files of Federal Trade Commission.

COMMENTS ON TABLE 16

(a) Same medium-sized companies that had low costs and large profits on tractors had best profits on combines.

TABLE 17.—*Costs per pound of grain binders for different companies in 1935 and 1936, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
1935		1936	
	<i>Cents</i>		<i>Cents</i>
Medium.....	7.64	Medium.....	7.62
Small.....	8.42	(1).....	8.45
(1).....	8.48	Small.....	8.59
(1).....	9.10	Medium.....	8.91
Medium.....	9.42	Do.....	8.96
Do.....	9.52	Do.....	8.97
(1).....	11.23	(1).....	10.22
		(1).....	11.04

¹ Disclosure of classification here would reveal the cost of the large company.

COMMENTS ON TABLE 17

(a) The same medium-sized company produced its grain binder at the lowest cost per pound in both years..

TABLE 18.—*Profits, costs, and price realizations on grain binders for manufacturers of different size in 1935 and 1936, arranged in order of decreasing profits*

[Expressed in percentages]

Size classification of company	Profit (price minus cost) ²	Price realization ³	Cost	Size classification of company	Profit (price minus cost) ²	Price realization ³	Cost
1935				1936			
	<i>Percent</i>	<i>Percent</i>			<i>Percent</i>	<i>Percent</i>	
Medium.....	100.0	100.0	\$192.11	Medium.....	100.0	100.0	\$195.31
Do.....	60.9	73.1	147.78	(1).....	66.4	100.2	213.16
(1).....	50.6	98.0	217.02	Medium.....	60.2	73.1	149.38
(1).....	36.9	70.9	156.88	(1).....	44.4	72.5	156.21
Small.....	— .5	57.8	146.51	Medium.....	5.3	62.6	151.77
(1).....	—7.0	62.0	161.06	Small.....	— .1	78.8	194.55
Medium.....	—13.9	64.0	170.16	Medium.....	—2.0	64.6	160.39
				(1).....	—3.8	59.7	149.39

¹ Disclosure of classification here would reveal the cost of the large company.

² Profit on implement on which largest profit was realized is called 100 percent to avoid disclosure of manufacturer. Profits on implements of other manufacturers are shown as percentages, computed by dividing each profit by the largest profit.

³ The net price realization on the implement on which largest profit is realized is called 100 percent and the price realizations of other manufacturers on other implements are shown as percentages, computed by dividing each price by the price designated 100 percent.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 18

(a) The same medium-sized company realized the largest profits on grain binders in both years.

TABLE 19.—*Costs per pound of 14-inch, 2-base tractor-gang plows for different companies in 1935 and 1936, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
1935	<i>Cents</i>	1936	<i>Cents</i>
Medium.....	6.88	Small.....	6.27
Small.....	7.14	(1).....	6.91
(1).....	7.21	Medium.....	6.98
Small.....	7.66	Do.....	7.67
Medium.....	8.14	Small.....	7.71
(1).....	8.24	Medium.....	7.74
Medium.....	8.70	Small.....	7.90
Small.....	8.95	(1).....	7.87
(1).....	9.17	(1).....	8.51
Small.....	9.62	Small.....	9.37
Do.....	13.20	Do.....	10.76

¹ Disclosure of classification here would reveal the cost of the large company.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 19

(a) In one year a medium-sized company and in another year a small company showed the lowest cost per pound on 14-inch, 2-base tractor-gang plows.

TABLE 20.—*Profits and price realizations on 14-inch, 2-base tractor-gang plows for manufacturers of different size in 1935 and 1936, arranged in order of decreasing profits*

[Expressed in percentages]

Size classification of company	Profit (price minus cost) ¹	Price realization ²	Size classification of company	Profit (price minus cost) ¹	Price realization ²
1935			1936		
Large.....	100.0	100.0	Large.....	100.0	100.0
Medium.....	90.2	98.4	Medium.....	74.2	96.4
Large.....	64.6	76.5	Large.....	69.8	77.2
Small.....	53.4	95.1	Medium.....	44.3	95.9
Do.....	42.3	102.5	Small.....	42.1	93.0
Medium.....	35.6	98.9	Do.....	29.4	99.3
Small.....	8.7	71.4	Do.....	27.2	72.7
Do.....	8.3	63.2	Do.....	15.9	61.3
Medium.....	-14.8	88.5	Do.....	13.7	56.7
Small.....	-18.9	55.7	Do.....	13.7	106.6
Do.....	-70.7	108.8	Medium.....	-2.7	79.1
Do.....	-73.3	77.3			

¹ Profit on implement on which largest profit was realized is called 100 percent to avoid disclosure of manufacturer. Profits on implements of other manufacturers are shown as percentages, computed by dividing each profit by the largest profit.

² The net price realization on the implement on which largest profit is realized is called 100 percent, and the price realizations of other manufacturers on other implements are shown as percentages, computed by dividing each price by the price designated 100 percent.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 20

(a) The International Harvester Co. showed the best profits on 14-inch, 2-base tractor-gang plows in both 1935 and 1936.

TABLE 21.—*Costs per pound of tractor-mounted 2-row cultivators for different companies in 1935 and 1936, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
1935		1936	
Medium.....	<i>Cents</i> 7.54	Medium.....	6.85
Do.....	8.07	(1).....	7.78
(1).....	8.13	Medium.....	8.02
(1).....	8.64	Do.....	8.07
(1).....	9.63	(1).....	9.17
Small.....	9.79	(1).....	9.93
Do.....	10.57	Small.....	10.11
Do.....	13.75	Do.....	10.86

¹ Disclosure of classification here would reveal the cost of the large company.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 21

(a) A medium-sized company showed the lowest cost per pound on tractor-mounted 2-row cultivators in both 1935 and 1936.

TABLE 22.—*Profits, costs, and price realizations on tractor-mounted 2-row cultivators for manufacturers of different size in 1935 and 1936, arranged in order of decreasing profits*

[Expressed in percentages]

Size classification of company	Profit (price minus cost) ²	Price realization ³	Cost	Size classification of company	Profit (price minus cost) ²	Price realization ³	Cost
1935	Percent	Percent		1936	Percent	Percent	
Medium.....	100.0	100.0	\$66.88	Medium.....	100.0	100.0	\$66.47
(1).....	72.8	88.2	63.53	(1).....	82.6	88.7	60.76
Medium.....	70.6	90.3	66.15	Medium.....	81.7	89.6	61.84
Small.....	66.5	64.1	42.21	Small.....	63.9	87.7	65.23
(1).....	52.3	87.1	68.46	(1).....	62.4	64.6	43.57
(1).....	27.4	82.3	71.23	(1).....	42.5	82.9	66.91
Medium.....	-12.2	77.3	77.99	Small.....	22.3	100.7	89.74
Small.....	-29.9	100.0	105.04	Medium.....	-3.0	73.1	70.81

¹ Disclosures of classification here would reveal the cost of the large company.² Profit on implement on which largest profit was realized is called 100 percent to avoid disclosure of manufacturer. Profits on implements of other manufacturers are shown as percentages, computed by dividing each profit by the largest profit.³ The net-price realization on the implement on which largest profit is realized is called 100 percent, and the price realizations of other manufacturers on other implements are shown as percentages, computed by dividing each price by the price designated 100 percent.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 22

(a) The same medium-sized company showed the largest profits on tractor-mounted two-row cultivators in both years. This company, however, was not the medium-sized company that showed the lowest costs per pound in the foregoing table.

TABLE 23.—*Costs per pound of riding cultivators as shown for different companies in 1935 and 1936, arranged in order of ascending costs*

Size classification of company	Costs per pound (cents)	Size classification of company	Costs per pound (cents)
1935		1936	
Small.....	6.04	Small.....	5.35
Medium.....	6.68	Medium.....	6.73
Small.....	7.28	Small.....	7.33
(1).....	7.56	(1).....	7.44
(1).....	7.74	Medium.....	7.58
Medium.....	7.85	(1).....	7.89
Small.....	8.50	(1).....	8.25
Do.....	9.24	Small.....	8.34
(1).....	9.32	Do.....	8.71

¹ Disclosure of classification here would reveal the cost of the large company.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 23

(a) Small and medium-sized companies had the lowest costs per pound on riding cultivators in both years.

TABLE 24.—*Profits, costs, and price realizations on riding cultivators for manufacturers of different size in 1935 and 1936, arranged in order of decreasing profits*

[Expressed in percentages]

Size classification of company	Profit (price minus cost) ¹	Price realization ²	Cost	Size classification of company	Profit (price minus cost) ¹	Price realization ²	Cost
1935				1936			
	<i>Percent</i>	<i>Percent</i>			<i>Percent</i>	<i>Percent</i>	
Medium.....	100.0	100.0	\$35.78	Medium.....	100.0	100.0	\$36.06
(1).....	68.1	96.7	38.17	(1).....	77.7	97.2	37.58
Small.....	61.7	78.6	30.26	Small.....	71.5	112.4	45.78
Do.....	54.6	92.9	38.07	Do.....	67.0	77.6	29.37
Medium.....	35.6	90.3	39.18	Medium.....	54.1	89.4	36.78
(1).....	22.8	111.7	51.14	(1).....	50.4	92.6	38.81
(1).....	20.2	73.3	32.89	(1).....	40.5	63.6	25.93
(1).....	8.9	89.3	42.04	(1).....	29.2	72.4	31.66
Small.....	2.7	61.3	29.31	Small.....	27.5	88.2	39.62

¹ Disclosure of classification here would reveal the cost of the large company.² Profit on implement on which largest profit was realized is called 100 percent to avoid disclosure of manufacturer. Profits on implements of other manufacturers are shown as percentages, computed by dividing each profit by the largest profit.³ The net price realization on the implement on which largest profit is realized is called 100 percent, and the price realizations of other manufacturers on other implements are shown as percentages, computed by dividing each price by the price designated 100 percent.

Source: Files of the Federal Trade Commission.

COMMENTS ON TABLE 24

(a) A medium-sized company showed the largest profit per pound. This was a company with lowest costs and largest profits in several of the foregoing tables.

PETROLEUM COST TABLES AND EXHIBIT ON PETROLEUM REFINING

Tables 25, 26, 27, and 28 show the average costs of producing a barrel of crude oil by five groups of producing companies in the years 1927, 1928, 1929, and 1930.

The five groups of producing companies, some of which are subsidiaries of the major integrated oil companies, are as follows: ¹

Standard majors.—Standard Oil Co. (New Jersey), Socony-Vacuum Oil Co., Inc., Standard Oil Co. (Indiana), Standard Oil Co. of California, Ohio Oil Co., and Standard Oil Co. (Ohio).

Non-Standard majors.—Texas Corporation, Gulf Oil Corporation, and 12 other major oil companies.

Medium-sized independents.—Companies not classified as majors but with production of 3,000,000 barrels and over.

Small independents.—Companies with production of from 1,000,000 to 3,000,000 barrels.

Very small independents.—Companies with production of 1,000,000 barrels or less.

Table 29 shows (a) cost ranks (based on position in cost series) of five largest crude oil producing companies (all owned by major integrated oil companies) for 1927, 1928, 1929, and 1930; (b) cost ranks of three lowest-cost producing companies over the same period.

Tables 30, 31, 32, and 33 show similar data for important oil fields: two in California, one in Oklahoma, and one in Texas.

Exhibit on petroleum refining gives conclusions concerning relation between refinery size and refinery costs based on unpublished allocated costs of producing a gallon of gasoline and total costs of refining a barrel of crude.

TABLE 25.—Average costs of producing a barrel of crude petroleum for groups of companies in 1927

	Number of producing companies	Number of barrels produced	Average cost per barrel
Standard majors.....	14	111,499,628	\$1.28
Non-Standard majors ¹	27	242,096,659	1.14
Medium-sized independents.....	9	62,407,302	.84
Small independents.....	28	45,784,961	1.12
Very small independents.....	85	19,719,841	1.48

¹ Includes the Atlantic Refining Co.

Source: Files of the U. S. Tariff Commission.

¹ In the tables the number of crude-oil producing companies is stated. Thus, the Humble Oil & Refining Co., the Carter Oil Co., and the Standard Oil Co. of Louisiana are counted as 3 companies, although all 3 are owned or controlled by the Standard Oil Co. (New Jersey).

COMMENTS ON TABLE 25

(a) Medium-sized independent oil companies—not any one of which was large enough to be classified as one of the 20 major oil companies—had the lowest average cost shown by any group in 1927.

(b) The group containing the small independents had the next lowest costs.

(c) The major oil companies not in the Standard group had a lower average cost of crude oil than the Standard companies.

TABLE 26.—Average costs of producing a barrel of crude petroleum for groups of companies in 1928

	Number of producing companies	Number of barrels produced	Average cost per barrel
Standard majors.....	16	115,325,814	\$1.14
Non-Standard majors ¹	25	247,233,355	1.03
Medium-sized independents.....	10	56,585,951	.81
Small independents.....	24	43,063,800	1.03
Very small independents.....	105	29,251,214	1.28

¹ Includes the Atlantic Refining Co.

Source: Files of the U. S. Tariff Commission.

COMMENTS ON TABLE 26

(a) Medium-sized independent oil companies—not any one of which was large enough to be classified as one of the 20 major oil companies—had the lowest average cost shown by any group in 1928.

(b) The groups containing the small independents and the non-Standard majors had the next lowest costs.

(c) The Standard majors had the next to highest costs.

TABLE 27.—Average costs of producing a barrel of crude petroleum for groups of companies in 1929

	Number of producing companies	Number of barrels produced	Average cost per barrel
Standard majors.....	17	137,365,944	\$1.11
Non-Standard majors ¹	28	271,896,698	.98
Medium-sized independents.....	15	79,426,874	.78
Small independents.....	40	61,871,484	1.06
Very small independents.....	212	35,029,065	1.36

¹ Includes the Atlantic Refining Co.

Source: Files of the U. S. Tariff Commission.

COMMENTS ON TABLE 27

(a) Medium-sized independent oil companies—not any one of which was large enough to be classified as one of the 20 major oil companies—had the lowest average cost shown by any group in 1929.

(b) The non-Standard majors had the next to lowest costs.

(c) The Standard majors had the next to highest costs.

TABLE 28.—Average costs of producing a barrel of crude petroleum for groups of companies in 1930

	Number of producing companies	Number of barrels produced	Average cost per barrel
Standard majors.....	20	163, 738, 582	\$. 99
Non-Standard majors ¹	29	263, 170, 570	1. 04
Medium-sized independents.....	12	53, 613, 240	. 80
Small independents.....	25	42, 692, 912	1. 10
Very small independents.....	105	25, 565, 243	1. 27

¹ Includes the Atlantic Refining Co.

Source: Files of the U. S. Tariff Commission.

COMMENTS ON TABLE 28

(a) Medium-sized independent oil companies—not any one of which was large enough to be classified as one of the 20 major oil companies—had the lowest average cost shown by any group in 1930.

(b) The Standard oil companies had the next to lowest costs.

TABLE 29.—Cost ranks and sizes of the 5 largest and 3 lowest cost crude-oil-producing companies in 1927, 1928, 1929, and 1930¹

Company	Affiliation	Size of operation ²	1927 cost rank ³	1928 cost rank ³	1929 cost rank ³	1930 cost rank ³
5 largest producing companies:						
A.....	Non-Standard major.....	Large.....	57	45	59	42
B.....	Standard major.....	do.....	51	52	68	64
C.....	Non-Standard major.....	do.....	45	34	28	29
D.....	do.....	do.....	5	16	32	24
E.....	Standard major.....	do.....	71	61	64	49
3 lowest cost producing companies:						
F.....	Independent.....	Small.....	2	2	2	5
G.....	do.....	Medium.....	15	5	3	2
H.....	do.....	Small.....	6	4	9	15

¹ Companies with annual production in excess of 1,000,000 barrels.² Large producers had production of from 10,000,000 to over 40,000,000 barrels.

Medium-sized producers had production of from 4,000,000 to 10,000,000 barrels.

Small producers had production under 4,000,000 barrels.

³ Lowest cost producer has cost rank 1, etc.

Source: Files of the U. S. Tariff Commission.

COMMENTS ON TABLE 29

(a) Total number of companies with annual production over 1,000,000 barrels covered: 1927, 73; 1928, 70; 1929, 91; 1930, 78.

(b) Cost ranks of 5 largest producing companies indicate that these largest producers did not have low costs during the 4 years considered.¹

(c) Lowest cost producers were a few relatively small or medium-sized independent producers.

¹ A producing company's cost rank is determined by its position in the cost series. Thus, the lowest cost company has rank 1, and the next lowest cost company has rank 2, etc.

TABLE 30.—*Cost ranks and sizes of 3 largest and 2 lowest cost producers of crude petroleum in Long Beach, Seal Beach, and Signal Hill (Calif.) in 1927, 1928, 1929, and 1930*

Company	Affiliation	Size of operation ¹	1927 cost rank	1928 cost rank	1929 cost rank	1930 cost rank
3 largest producers:						
A.....	Nonstandard major.....	Large.....	2	5	3	4
B.....	do.....	do.....	6	6	4	3
C.....	do.....	do.....	5	4	11	9
2 lowest cost producers:						
D.....	Independent.....	Small.....	1	3	1	2
E.....	do.....	do.....	4	(²)	2	1

¹ Large producers had annual production of from over 2,000,000 to over 10,000,000 barrels. Small producers had production of about 1,000,000 barrels.

² No data.

Source: Files of the U. S. Tariff Commission.

COMMENTS ON TABLE 30

(a) Total number of operating companies covered for Long Beach, Seal Beach, and Signal Hill fields: 1927, 10; 1928, 13; 1929, 13; 1930, 10.

(b) Major companies did not have low costs.

(c) Two independent producers with small production had the lowest costs.

TABLE 31.—*Cost ranks and sizes of 2 largest producers and the lowest-cost producer of crude petroleum in Santa Fe Springs (California) in 1927, 1928, 1929, and 1930*

Company	Affiliation	1927 cost rank	1928 cost rank	1929 cost rank	1930 cost rank
2 largest producers:					
A.....	Major.....	6	4	2	2
B.....	do.....	5	8	11	6
Lowest-cost producer: C.....	Small independent.....	1	3	7	3

Source: Files of the U. S. Tariff Commission.

COMMENTS ON TABLE 31

(a) Total number of operating companies covered for Santa Fe Springs field: 1927, 7; 1928, 8; 1929, 11; 1930, 9.

(b) No company maintained a really low-cost position.

(c) One major oil company—not of the Standard group—and one small independent oil company showed the lowest costs over the 4-year period.

TABLE 32.—*Cost ranks and sizes of 2 largest producers and the lowest-cost producer of crude petroleum in Seminole field (Oklahoma) in 1927, 1928, 1929, and 1930*

Company	Affiliation	Size of operation ¹	1927 cost rank	1928 cost rank	1929 cost rank	1930 cost rank
2 largest producers:						
A.....	Major.....	Large.....	14	8	10	6
B.....	do.....	do.....	4	6	4	4
Lowest-cost producer: C.....	do.....	Medium.....	1	1	1	3

¹ Large producers had an average production over the 4-year period of over 8,000,000 barrels. Medium-sized producers had an average production over the 4-year period of less than 8,000,000 barrels.

Source: Files of the U. S. Tariff Commission.

COMMENTS ON TABLE 32

(a) Total number of operating companies covered for Seminole field: 1927, 17; 1928, 19; 1929, 19; 1930, 21.

(b) Lowest-cost operation was medium-sized one owned by a non-Standard major oil company.

TABLE 33.—*Cost ranks and sizes of 3 largest and 2 lowest-cost producers of crude petroleum in west Texas in 1927, 1928, 1929, and 1930*

Company	Affiliation	Size of operation ¹	1927 cost rank	1928 cost rank	1929 cost rank	1930 cost rank
3 largest producers:						
A.....	Major.....	Large.....	5	6	5	6
B.....	do.....	Medium.....	1	1	1	1
C.....	do.....	do.....	9	14	11	13
2 lowest-cost producers:						
B.....	do.....	do.....	1	1	1	1
D.....	Independent.....	Small.....	2	2	(?)	2

¹ Large producers had average production over the 4-year period of over 10,000,000 barrels. Medium-sized producers had average production over the 4-year period of over 5,000,000 barrels and under 10,000,000 barrels. Small producers had average production over the 4-year period under 2,000,000 barrels.

² No data.

Source: Files of the U. S. Tariff Commission.

COMMENTS ON TABLE 33

(a) Total number of operating companies covered for west Texas field: 1927, 14; 1928, 19; 1929, 20; 1930, 22.

(b) Lowest-cost producing unit of those covered in the west Texas field had medium-sized production and belonged to a non-Standard major.

(c) The next lowest-cost producer was a small independent.

EXHIBIT ON PETROLEUM REFINING

Analysis of refining cost data complicated by the variety and varying proportions of petroleum products made by different refineries.

A refinery's efficiency is determined by: (1) Its allocated cost of producing a gallon of gasoline; (2) its total cost of converting a barrel of crude oil into all the various petroleum products refined.

Cost data for refineries producing lubricants not included with cost data for refineries not producing lubricants, because of special costs involved in production of lubricants.

EXHIBIT 1

SIZES OF LOWEST-COST REFINERIES OF CALIFORNIA, GULF COAST, ATLANTIC COAST, AND INTERIOR STATES, 1929-30¹

CALIFORNIA

Nonlubricant refineries covered: 22 in 1929; 23 in 1930.

Four lowest cost of the refineries covered were medium-sized or small.²

Lubricant refineries covered: Six in 1929; seven in 1930.

Of two lowest-cost refineries of the group covered, one was small and other was medium-sized.³

¹ A refinery's cost position was determined by: (1) Its cost of processing a barrel of crude; (2) its allocated cost of producing a gallon of gasoline. Costs of charging stocks (including crude oil) excluded. A small refinery may belong to a large company.

² Large: Capacity over 50,000 barrels per day. Small: Capacity 10,000 barrels per day or under.

³ Large: Capacity over 60,000 barrels per day. Small: Capacity 10,000 barrels per day or under.

GULF COAST

Nonlubricant refineries covered: Seven in 1929; eight in 1930.

Lowest-cost refinery (belonging to a large company) was one of smallest refineries of this group.⁴

Lubricant refineries covered: Seven in 1929 and six in 1930.

Lowest-cost refinery (belonging to a large company) was one of two largest refineries of this group.

ATLANTIC COAST

Nonlubricant refineries covered: Nine in 1929; eight in 1930.

Lowest-cost refinery in group covered was medium-sized.

Lubricant refineries covered: 12 in 1929 and 1930.

Two lowest-cost refineries were among the small refineries of this group.⁵

INTERIOR STATES

Nonlubricant refineries: 66 in 1929; 71 in 1930.

Two lowest-cost refineries were both small refineries of this group.⁶

Lubricant refineries: 15 in 1929; 17 in 1930.

Lowest-cost refinery was one of the small refineries of this group.⁴

⁴ Small: Capacity 1,000 barrels per day and under.

⁵ Large: Capacity over 150,000 barrels per day. Small: Capacity 20,000 barrels per day and under.

⁶ Small: Capacity 15,000 barrels per day and under.

Source: United States Tariff Commission's files.

BEET AND CANE SUGAR COST TABLES

Tables 34, 35, 36, 37, 38, 39, 40, and 41 show costs of individual beet-sugar factories and companies for a 5-year pre-war period and for 3 years at beginning of present decade.

Tables 42, 43, and 44 show the cost ranks of certain producers of raw cane sugar in Cuba, Hawaii, and Louisiana during the 3 years at beginning of present decade.

Tables 45, 46, 47, 48, 49, 50, 51, 52, and 53 show the costs of refining raw cane sugar for refineries and refining companies for 1929, 1930, and 1931.

Size classification of beet-sugar companies:

Large company.—Great Western Sugar Co.

Medium-sized companies.—Holly Sugar Corporation, Utah-Idaho Sugar Co., American Crystal Sugar Co. (formerly American Beet Sugar Co.), Spreckels Sugar Co., Amalgamated Sugar Co., and Michigan Sugar Co.

Small companies.—All other beet-sugar companies.

Size classification for Cuban centrals:

Large.—Centrals with average annual production over 150,000,000 pounds.

Medium-sized.—Centrals with average annual production between 100,000,000 and 150,000,000 pounds.

Small.—Centrals with average annual production below 100,000,000 pounds.

Size classification for Hawaiian sugar mills:

Large.—Mills with average annual production over 150,000,000 pounds.

Medium-sized.—Mills with average annual production between 100,000,000 and 150,000,000 pounds.

Small.—Mills with average annual production less than 100,000,000 pounds.

Size classification for Louisiana companies producing raw cane sugar:

Large.—Companies with average annual production over 20,000,000 pounds.

Medium-sized.—Companies with average annual production between 15,000,000 and 20,000,000 pounds.

Small.—Companies with average annual production less than 15,000,000 pounds.

Size classification for cane-sugar-refining companies:

Large.—American Sugar Refining Co.

Medium-sized.—National Sugar Refining Co., and California & Hawaiian Sugar Refining Corporation, Ltd.

Small.—Other sugar-refining companies.

TABLE 34.—*Costs of producing beet sugar by plants averaged for the 5 crop years ending in 1913-14, arranged in order of ascending costs*

Rank of plant in production	Location of plant	Classification of company	Cost per pound, cents.
9.	California	Small	2.9413
2.	do.	do.	2.9894
1.	do.	Medium	3.1294
55.	Utah	do.	3.1310
11.	California	Small	3.2038
31.	Utah	Medium	3.2300
34.	do.	do.	3.2783
19.	do.	do.	3.3400
4.	Colorado	Large	3.3641
25.	Michigan	Medium	3.3735
28.	Utah	Small	3.4005
24.	California	Medium	3.4087
5.	Colorado	Large	3.4150
8.	Utah	Medium	3.4388
3.	Montana	Large	3.4410
29.	Idaho	Medium	3.4584
6.	Colorado	Large	3.5766
17.	do.	do.	3.5843
14.	do.	do.	3.5843
20.	Idaho	Medium	3.6151
38.	California	Small	3.6338
12.	do.	Medium	3.6538
23.	Colorado	Large	3.6575
21.	do.	do.	3.6821
32.	do.	do.	3.7166
10.	Nebraska	do.	3.7550
22.	Colorado	do.	3.7618
7.	do.	Medium	3.7760
13.	Michigan	do.	3.7844
33.	California	Small	3.8015
15.	Michigan	do.	3.8089
48.	California	do.	3.8710
49.	Idaho	Medium	3.8734
37.	Michigan	Small	3.9185
16.	do.	Medium	3.9419
36.	California	Small	3.9596
39.	Michigan	Medium	4.1495
35.	do.	do.	4.1691
52.	Colorado	Small	4.1932
46.	Michigan	do.	4.1980
18.	Colorado	Medium	4.1986
54.	Michigan	Small	4.3212
30.	do.	Medium	4.3345
44.	do.	Small	4.3339
27.	do.	do.	4.3486
40.	Colorado	do.	4.3489
42.	Kansas	do.	4.4518
45.	Ohio	do.	4.5133
47.	Wisconsin	do.	4.5807
43.	Michigan	do.	4.5855
51.	Minnesota	do.	4.6366
26.	Michigan	do.	4.7937
56.	Ohio	do.	4.8066
61.	Colorado	Medium	4.9635
58.	Wisconsin	Small	4.9974
53.	Ohio	do.	5.0126
64.	Oregon	Medium	5.1749
50.	Wisconsin	Small	5.3652
60.	Nebraska	Medium	5.4213
57.	Iowa	Small	5.4628
59.	Wisconsin	do.	5.5405
41.	Michigan	do.	5.5690
63.	Colorado	do.	6.4079
62.	Arizona	do.	6.4465

Source: Federal Trade Commission files.

COMMENTS ON TABLE 34

(a) Costs shown in foregoing table are averages for 5-year period ending with the crop-year 1913-14.

(b) Lowest-cost plant had ninth largest production and belonged to a small beet-sugar company in California.

(c) Next lowest costs shown by the two largest sugar plants, also located in California. One of these plants belonged to a small company, another to a medium-sized company.

(d) Great Western had some fairly low-cost plants, some average-cost plants, but no very high-cost plants.

TABLE 35.—Costs of producing beet sugar by large, medium-sized, and small companies, averaged for the 5 crop years ending in 1913-14, arranged in order of ascending costs

Classification of company	Cost per pound	Classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Small.....	2.9413	17. (1).....	4.1932
2. Medium.....	2.9894	18. (1).....	4.2491
3. Small.....	3.2038	19. Small.....	4.3339
4. Medium.....	3.2504	20. Small.....	4.3489
5. Small.....	3.4005	21. Small.....	4.4518
6. Medium.....	3.4472	22. Small.....	4.5807
7. Medium.....	3.4724	23. Small.....	4.6144
8. (1).....	3.5440	24. Small.....	4.6366
9. (1).....	3.6338	25. Small.....	4.8223
10. (1).....	3.8015	26. Small.....	4.9974
11. (1).....	3.8710	27. Small.....	5.3652
12. (1).....	3.9188	28. Small.....	5.4628
13. Medium.....	3.9313	29. Small.....	5.5405
14. Medium.....	3.9474	30. Small.....	5.5699
15. Small.....	3.9596	31. Small.....	6.4079
16. (1).....	4.0403	32. Small.....	6.4465

¹ Disclosure of classification here might reveal the costs of the large company.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 35

(a) During pre-war period covered, at least seven small and medium-sized companies had lower costs than Great Western, whose position in the cost series is not disclosed.

TABLE 36.—Costs of producing beet sugar per pound by plants of different size during the crop year 1929-30, arranged in order of ascending costs

Production rank of plant	Size classification of company	Cost per pound	Production rank of plant	Size classification of company	Cost per pound
		<i>Cents</i>			<i>Cents</i>
32.....	Medium.....	3.9218	48.....	Medium.....	4.9093
(1).....	(1).....	4.1077	12.....	Large.....	4.9823
(1).....	(1).....	4.1872	59.....	Medium.....	4.9838
19.....	Medium.....	4.2428	60.....	do.....	4.9937
(1).....	(1).....	4.2654	34.....	do.....	5.0162
43.....	Small.....	4.2972	16.....	Large.....	5.0269
26.....	Medium.....	4.3389	(1).....	(1).....	5.0363
(1).....	(1).....	4.3575	50.....	Medium.....	5.0744
(1).....	(1).....	4.3588	61.....	do.....	5.0763
33.....	Large.....	4.3697	10.....	do.....	5.1204
(1).....	(1).....	4.4570	46.....	do.....	5.1643
39.....	Medium.....	4.4802	49.....	Small.....	5.1918
56.....	do.....	4.5202	58.....	Medium.....	5.2006
14.....	Large.....	4.5401	44.....	Small.....	5.2253
23.....	do.....	4.5649	17.....	Medium.....	5.2797
(1).....	(1).....	4.5949	47.....	do.....	5.3000
41.....	Medium.....	4.5975	37.....	do.....	5.3330
(1).....	(1).....	4.6393	20.....	Large.....	5.3847
11.....	Large.....	4.6581	28.....	do.....	5.3987
21.....	do.....	4.6676	52.....	Medium.....	5.4748
36.....	Medium.....	4.6852	31.....	do.....	5.7078
27.....	do.....	4.7079	64.....	Small.....	5.7691
22.....	Large.....	4.7182	54.....	Medium.....	5.7937
18.....	do.....	4.7275	30.....	do.....	5.7949
40.....	Medium.....	4.7362	51.....	Small.....	5.9602
15.....	do.....	4.7441	57.....	Medium.....	6.0456
35.....	Large.....	4.8077	53.....	do.....	6.0708
13.....	do.....	4.8213	63.....	do.....	6.1402
38.....	Medium.....	4.8384	45.....	do.....	6.1689
42.....	do.....	4.8697	55.....	Small.....	6.4514
24.....	do.....	4.8715	65.....	do.....	6.6283
25.....	Large.....	4.8720	62.....	Medium.....	6.7681
29.....	Medium.....	4.8814	66.....	Small.....	6.8114

¹ Disclosure of plant production rank or size classification of company might reveal the identity of plant or company it belongs to.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 36

(a) Lowest-cost plant was a small plant, thirty-second in size, owned by a medium-sized company.

(b) Most of the large plants had quite low costs.

(c) Great Western's plants were fairly low-cost plants, although some had average costs and some fairly high costs.

TABLE 37.—*Costs of producing beet sugar per pound by plants of different size during the crop year 1930-31, arranged in order of ascending costs*

Production rank of plant	Size classification of company	Cost per pound	Production rank of plant	Size classification of company	Cost per pound
		<i>Cents</i>			<i>Cents</i>
22.....	Large.....	3. 7660	40.....	Medium.....	4. 8767
11.....	Medium.....	3. 9979	54.....	Small.....	4. 8861
32.....	do.....	4. 0499	53.....	Medium.....	4. 8920
(1).....	(1).....	4. 0548	20.....	Large.....	4. 9510
43.....	Medium.....	4. 0651	23.....	do.....	5. 0524
(1).....	(1).....	4. 1385	(1).....	(1).....	5. 0999
(1).....	(1).....	4. 1806	64.....	Small.....	5. 1450
47.....	Small.....	4. 2094	49.....	Medium.....	5. 1516
(1).....	(1).....	4. 2193	16.....	Large.....	5. 1675
45.....	Medium.....	4. 2925	59.....	Medium.....	5. 1749
29.....	Large.....	4. 3501	50.....	do.....	5. 1777
39.....	Medium.....	4. 3684	61.....	Small.....	5. 1932
(1).....	(1).....	4. 3836	62.....	Medium.....	5. 2077
(1).....	(1).....	4. 4115	56.....	do.....	5. 2078
(1).....	(1).....	4. 4342	58.....	do.....	5. 2336
31.....	Medium.....	4. 4401	51.....	do.....	5. 2516
33.....	do.....	4. 4945	14.....	do.....	5. 3409
28.....	Large.....	1. 5520	48.....	do.....	5. 3635
35.....	Medium.....	4. 5558	25.....	Large.....	5. 3913
(1).....	(1).....	4. 5921	37.....	Medium.....	5. 4550
30.....	Medium.....	4. 6216	60.....	do.....	5. 5284
10.....	Large.....	4. 6355	12.....	Large.....	5. 5462
57.....	Medium.....	4. 6550	24.....	do.....	5. 5504
17.....	Large.....	4. 7061	55.....	Small.....	5. 5703
44.....	Small.....	4. 7209	27.....	Large.....	5. 7311
21.....	Large.....	4. 8080	26.....	Medium.....	5. 7657
19.....	do.....	4. 8197	52.....	do.....	5. 8091
42.....	Medium.....	4. 8334	41.....	do.....	6. 0992
46.....	do.....	4. 8375	65.....	Small.....	6. 1448
18.....	Large.....	4. 8429	36.....	Medium.....	6. 2231
15.....	Medium.....	4. 8462	38.....	do.....	6. 2411
34.....	do.....	4. 8565	63.....	Small.....	6. 4042
13.....	do.....	4. 8668			

¹ Disclosure of plant production rank or size classification of company might reveal the identity of plant or company it belongs to.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 37

(a) Three lowest-cost beet-sugar plants in 1929-30 were small or medium size. One of these plants belonged to the Great Western Sugar Co.

(b) The largest plants had fairly low costs.

TABLE 38.—*Costs of producing beet sugar per pound by plants of different size during the crop year 1931-32, arranged in order of ascending costs*

Production rank of plant	Size classification of company	Cost per pound	Production rank of plant	Size classification of company	Cost per pound
		<i>Cents</i>			<i>Cents</i>
(1).....	(1).....	3.2884	16.....	Medium.....	3.9939
(1).....	(1).....	3.2916	44.....	do.....	4.0047
(1).....	(1).....	3.3774	42.....	do.....	4.0223
(1).....	(1).....	3.3892	(1).....	(1).....	4.0234
(1).....	(1).....	3.4008	29.....	Large.....	4.0290
(1).....	(1).....	3.4674	37.....	Medium.....	4.0423
17.....	Large.....	3.5579	39.....	Large.....	4.0615
25.....	Medium.....	3.5660	51.....	Medium.....	4.1243
22.....	Large.....	3.6087	34.....	do.....	4.1487
14.....	do.....	3.6426	10.....	Large.....	4.1611
27.....	do.....	3.6503	31.....	Medium.....	4.2013
20.....	do.....	3.6687	40.....	do.....	4.2087
23.....	do.....	3.6847	(1).....	(1).....	4.2095
12.....	do.....	3.6957	13.....	Large.....	4.2148
(1).....	(1).....	3.7108	33.....	do.....	4.2442
21.....	Medium.....	3.7245	49.....	Small.....	4.4042
43.....	Small.....	3.7285	57.....	do.....	4.4179
15.....	Medium.....	3.7352	50.....	Medium.....	4.4584
47.....	Small.....	3.7422	28.....	Large.....	4.5134
36.....	Medium.....	3.7564	45.....	Medium.....	4.5495
19.....	Large.....	3.7582	32.....	do.....	4.6366
11.....	Medium.....	3.7613	52.....	do.....	4.7288
30.....	do.....	3.7842	54.....	do.....	4.7894
41.....	do.....	3.8685	48.....	Small.....	4.8653
35.....	do.....	3.8703	55.....	Medium.....	4.9018
26.....	do.....	3.8739	53.....	Small.....	5.0201
18.....	Large.....	3.9004	46.....	Medium.....	5.0695
38.....	do.....	3.9191	56.....	Small.....	5.3003
24.....	Medium.....	3.9492	58.....	do.....	5.8758

¹ Disclosure of plant production rank or size classification of company might reveal the identity of plant or company it belongs to.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 38

(a) Most of the large beet-sugar plants in 1931-32 had low costs, although largest plant was not one of the low-cost plants.

(b) Great Western had a considerable number of low-cost plants, but this company also had some very high-cost plants.

TABLE 39.—*Costs of producing beet sugar per pound by companies of different size during the crop year 1929-30, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Small.....	4.2972	9. (1).....	5.3795
2. (1).....	4.5721	10. Medium.....	5.5239
3. Medium.....	4.6393	11. Small.....	5.7691
4. (1).....	4.6880	12. Small.....	5.9602
5. Medium.....	4.8121	13. Small.....	6.4514
6. Medium.....	4.9179	14. Small.....	6.6288
7. Small.....	5.1918	15. Small.....	6.8114
8. Small.....	5.2253		

¹ Disclosure of classification would reveal cost of large company.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 39

(a) Lowest-cost beet-sugar company in 1929-30 was a small company.

(b) Great Western Sugar Co. was one of the low-cost companies in that year.

TABLE 40.—*Costs of producing beet sugar per pound by companies of different size during the crop year 1930-31, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Medium.....	4.0548	9. Small.....	5.1430
2. Small.....	4.2094	10. Small.....	5.1932
3. (1).....	4.5536	11. Medium.....	5.1974
4. (1).....	4.6215	12. (1).....	5.5272
5. Small.....	4.7209	13. Small.....	5.5703
6. Medium.....	4.7603	14. Small.....	6.1448
7. Medium.....	4.8314	15. Small.....	6.4042
8. Small.....	4.8861		

1 Disclosure of classification would reveal cost of large company.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 40

(a) The lowest-cost beet-sugar companies in 1930-31 were medium-sized and small.

TABLE 41.—*Costs of producing beet sugar per pound by companies of different size during the crop year 1931-32, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Medium.....	3.5660	9. (1).....	4.1662
2. (1).....	3.6534	10. Small.....	4.4042
3. Small.....	3.7285	11. Small.....	4.4179
4. Small.....	3.7422	12. Small.....	4.8653
5. (1).....	3.8275	13. Small.....	5.0201
6. Medium.....	4.0222	14. Small.....	5.3003
7. Medium.....	4.0234	15. Small.....	5.8758
8. Medium.....	4.0985		

1 Disclosure of classification would reveal cost of large company.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 41

(a) The lowest-cost beet-sugar company in 1931-32 was medium-sized.

(b) Great Western Sugar Co. was one of the low-cost companies in that year.

TABLE 42.—*Cost ranks and size of 4 largest centrals and 4 lowest-cost centrals in Cuba over a 3-year period*

Central	Size	1929-30 cost rank	1930-31 cost rank	1931-32 cost rank
4 largest centrals:				
A.....	Large.....	35	39	46
B.....	do.....	8	37	26
C.....	do.....	42	56	31
D.....	do.....	58	70	67
4 lowest-cost centrals:				
E.....	Medium.....	2	2	16
F.....	Small.....	1	19	1
G.....	do.....	5	4	2
H.....	do.....	4	3	6

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 42

(a) Total number of Cuban centrals covered: 1929-30, 78; 1930-31, 71; 1931-32, 70.

(b) Largest central (A) had cost ranks 35, 39, and 46, respectively, for the 3 years covered. By that is meant that there were 34 centrals, 38 centrals, and 45 centrals, respectively, with lower costs during the years covered.

(c) Lowest-cost centrals were small or medium-sized.

TABLE 43.—*Cost ranks and size of 2 largest mills and 4 lowest-cost mills in Hawaii over a 3-year period*

Mill	Size	1929-30 cost rank	1930-31 cost rank	1931-32 cost rank
2 largest mills:				
A.....	Large.....	13	7	7
B.....	do.....	16	22	26
4 lowest-cost mills:				
C.....	Medium.....	2	8	5
D.....	Small.....	3	1	6
E.....	do.....	1	3	1
F.....	do.....	6	6	3

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 43

(a) Total number of Hawaiian sugar mills covered: 1929-30, 38; 1930-31, 38; 1931-32, 36.

(b) Neither of the two largest Hawaiian sugar mills had relatively low costs.

(c) The lowest-cost sugar mills were relatively small.

TABLE 44.—*Cost ranks and size of 2 largest raw-sugar companies and 3 lowest-cost raw-sugar companies in Louisiana*

Companies	Size	1929-30 cost rank	1930-31 cost rank	1931-32 cost rank
2 largest companies:				
A ¹	Large.....	17	19	12
B.....	do.....	13	18	23
3 lowest-cost companies:				
C.....	Small.....	5	1	3
D.....	do.....	3	8	2
E.....	do.....	4	2	1

¹ This is the only raw-sugar company covered that operated more than 1 mill.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 44

(a) Total number of Louisiana raw-sugar companies covered: 1929-30, 22; 1930-31, 25; 1931-32, 23.

(b) None of the Louisiana sugar companies were large, when compared with Cuban centrals or Hawaiian mills.

(c) The two largest Louisiana raw-sugar companies had quite high costs.

(d) The lowest-cost companies were relatively small.

TABLE 45.—*Costs of refined cane sugar by refineries for the year 1929, arranged in order of ascending costs*

Rank of refining plant in production	Size classification of company	Cost per pound	Rank of refining plant in production	Size classification of company	Cost per pound
<i>Cents</i>			<i>Cents</i>		
9.	Small.	4.4285	14.	Small.	4.6823
(1)	(1)	4.5414	15.	Medium.	4.7217
(1)	(1)	4.5684	11.	Small.	4.7311
18.	Small.	4.5701	(1)	(1)	4.7321
16.	do.	4.5798	12.	Small.	4.7500
17.	do.	4.5909	7.	Large.	4.7744
19.	do.	4.5930	10.	do.	4.8018
(1)	(1)	4.6002	8.	do.	4.8442
(1)	(1)	4.6191	13.	Small.	4.8606
(1)	(1)	4.6218	20.	do.	4.9698

† Disclosure of production rank of refinery or size of company might reveal its identity.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 45

(a) Lowest-cost sugar refinery in 1929 was ninth largest in size.

(b) The next lowest-cost refineries were large.

TABLE 46.—*Costs of refined cane sugar by refineries for the year 1930, arranged in order of ascending costs*

Rank of refining plant in production	Size classification of company	Cost per pound	Rank of refining plant in production	Size classification of company	Cost per pound
<i>Cents</i>			<i>Cents</i>		
9.	Small.	4.0609	19.	Small.	4.3118
12.	do.	4.1188	11.	do.	4.3324
(1)	(1)	4.1538	10.	do.	4.4062
(1)	(1)	4.2042	7.	Large.	4.4098
(1)	(1)	4.2143	8.	do.	4.4102
(1)	(1)	4.2220	14.	do.	4.4771
15.	Small.	4.2692	13.	Small.	4.4795
16.	Medium.	4.2789	18.	do.	4.4874
(1)	(1)	4.2805	17.	do.	4.4878
(1)	(1)	4.2937	20.	do.	4.7617

† Disclosure of production rank of refinery or size of company might reveal its identity.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 46

(a) Again, the lowest-cost refinery was ninth in size.

(b) The largest refineries had relatively low costs, but these largest refineries did not necessarily belong to the largest refining company.

TABLE 47.—*Costs of refined cane sugar by refineries for the year 1931, arranged in order of ascending costs*

Rank of refining plant in production	Size classification of company	Cost per pound	Rank of refining plant in production	Size classification of company	Cost per pound
<i>Cents</i>			<i>Cents</i>		
9.	Small.	3.9689	(1)	(1)	4.1800
(1)	(1)	4.0253	13.	Small.	4.2039
11.	Small.	4.0475	10.	do.	4.2204
(1)	(1)	4.1012	7.	Large.	4.2497
(1)	(1)	4.1433	12.	Small.	4.2719
19.	Small.	4.1470	8.	Large.	4.2738
(1)	(1)	4.1551	14.	do.	4.3579
15.	Small.	4.1614	17.	Small.	4.4460
16.	do.	4.1615	18.	do.	4.5442
(1)	(1)	4.1616			

† Disclosure of production rank of refinery or size of company might reveal its identity.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 47

(a) Again, the lowest-cost refinery was ninth in size.

(b) Some of the larger refineries had relatively low costs, but these refineries did not necessarily belong to the largest refining companies.

TABLE 48.—*Costs of refined cane sugar by large, medium-sized, and small companies for the year 1929, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Small.....	4.4285	8. Small.....	4.6191
2. Medium.....	4.5684	9. Small.....	4.6823
3. Small.....	4.5701	10. Small.....	4.7311
4. Small.....	4.5798	11. (?).....	4.7466
5. Small.....	4.5909	12. Small.....	4.7500
6. (?).....	4.5920	13. Small.....	4.8605
7. (?).....	4.5930	14. Small.....	4.9698

¹ Since only 1 company is designated as large and 2 as medium-sized, the size classification of companies 6, 7, and 11 are purposely not revealed.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 48

(a) The lowest-cost cane-sugar refining companies in 1929 were small or medium-sized.

(b) The largest refining company did not have a low cost.

TABLE 49.—*Costs of refined cane sugar by large, medium-sized, and small companies for the year 1930, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Small.....	4.0609	8. Small.....	4.3324
2. Small.....	4.1188	9. (?).....	4.3451
3. Medium.....	4.1990	10. Small.....	4.4062
4. (?).....	4.2042	11. (?).....	4.4795
5. Small.....	4.2692	12. Small.....	4.4874
6. Small.....	4.2806	13. Small.....	4.4878
7. Small.....	4.3118	14. Small.....	4.7617

¹ Since only 1 company is designated as large and 2 as medium-sized, the size classification of companies 4, 9, and 11 are purposely not revealed.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 49

(a) The lowest-cost cane-sugar refining companies in 1930 were small or medium-sized.

(b) The largest refining company did not have a low cost.

TABLE 50.—*Costs of refined cane sugar by large, medium-sized, and small companies for the year 1931, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Small.....	3.9689	8. Small.....	4.1616
2. Small.....	4.0475	9. Small.....	4-2039
3. Medium.....	4.0675	10. (1).....	4.2204
4. Small.....	4.1470	11. (1).....	4-2287
5. (1).....	4.1581	12. Small.....	4.2719
6. Small.....	4-1614	13. Small.....	4.4460
7. Small.....	4.1615	14. Small.....	4.5442

¹ Since only 1 company is designated as large and 2 as medium-sized, the size classification of companies 5, 10, and 11 are purposely not revealed.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 50

(a) The lowest-cost cane-sugar refining companies in 1931 were small or medium-sized.

(b) The largest refining company did not have a low cost.

TABLE 51.—*Costs of refining cane sugar (cost of raw sugar excluded) by large, medium-sized, and small companies for the year 1929, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Small.....	0.5192	8. (1).....	.6601
2. Small.....	.5566	9. Small.....	.6655
3. Small.....	.5735	10. Small.....	.7428
4. Small.....	.5849	11. (1).....	.7450
5. Medium.....	.6137	12. Small.....	.7492
6. (1).....	.6341	13. Small.....	.7557
7. Small.....	.6346	14. Small.....	.9470

¹ Since only 1 company is designated as large and 2 as medium-sized, the size classification of companies 6, 8, and 11 are purposely not revealed.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 51

(a) The costs shown in this table are the same as those shown in table 48, except that the cost of raw sugar has been deducted.

(b) Small and medium-sized companies had the lowest refining costs in 1929.

(c) The largest cane-sugar refining company had relatively high conversion costs in that year.

TABLE 52.—*Costs of refining cane sugar (cost of raw sugar excluded) by large, medium-sized, and small companies for the year 1930, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Small.....	0.5497	8. (1).....	.6683
2. Small.....	.5783	9. Small.....	.6801
3. Medium.....	.6214	10. Small.....	.6849
4. Small.....	.6370	11. (1).....	.6921
5. Small.....	.6383	12. Small.....	.7293
6. (1).....	.6403	13. Small.....	.7757
7. Small.....	.6600	14. Small.....	1.0575

¹ Since only 1 company is designated as large and 2 as medium-sized, the size classification of companies 6, 8, and 11 are purposely not revealed.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 52

(a) The costs shown in this table are the same as those shown in table 49, except that the cost of raw sugar has been deducted.

(b) Small and medium-sized companies had the lowest refining costs in 1930.

(c) The largest cane-sugar refining company had relatively high conversion costs in that year.

TABLE 53.—*Costs of refining cane sugar (cost, of raw sugar excluded) by large, medium-sized, and small companies for the year 1931, arranged in order of ascending costs*

Size classification of company	Cost per pound	Size classification of company	Cost per pound
	<i>Cents</i>		<i>Cents</i>
1. Small.....	0.4865	8. (1).....	.6328
2. Small.....	.5108	9. Small.....	.6374
3. Small.....	.5182	10. Small.....	.6438
4. Medium.....	.5290	11. (1).....	.6727
5. Small.....	.5857	12. Small.....	.7186
6. (1).....	.6075	13. Small.....	.7554
7. Small.....	.6238	14. Small.....	.9716

¹ Since only 1 company is designated as large and 2 as medium-sized, the size classification of companies 6, 8, and 11 are purposely not revealed.

Source: U. S. Tariff Commission files.

COMMENTS ON TABLE 53

(a) The costs shown in this table are the same as those shown in table 50, except that the cost of raw sugar has been deducted.

(b) Small and medium-sized companies had the lowest refining costs in 1931.

(c) The largest cane-sugar refining company had relatively high conversion costs in that year.

MILK AND MILK PRODUCTS COST TABLES

Tables 54, 55, 56, 57, and 58 show the costs of distributing a quart of fluid milk in Boston, Milwaukee, Cincinnati, Philadelphia, Connecticut, and West Virginia. The periods covered are not the same for each locality, but all the data are for some period between 1933 and 1935. The first two of these tables are group-cost tables, whereas the other three are individual-cost tables.

Table 54 gives the average costs of retail and wholesale distribution for "large" dealers, and all dealers in Boston. Table 55 gives the average costs of three groups of distributors in Milwaukee: Two "large," two "medium-sized," and two "small."

Tables 56 and 57 give the individual costs of a number of distributors in West Virginia. In the first table the costs of wholesale and retail distribution are combined. In the second table the costs are for retail distribution only.

Table 58 gives the costs for 1 month for Connecticut, Cincinnati, and Philadelphia.

Table 59 is a group-cost table for butter centralizers for 1918. Table 60 contains a further analysis of the data in table 59 together with additional data for 1914, 1915, 1916, and 1917.

Table 60 shows the relative positions in the cost series of the largest and the lowest-cost centralizers for each of the 5 years from 1914 through 1918. Table 59 covers 34 companies for 1918, whereas table 60 shows the cost ranks for only 25 companies in that year. Although the cost data for 34 companies were available for 1918, there were no figures for some of these companies for earlier years. In table 60, 25 companies were used because figures for these companies were available for 3 years.

Table 61 shows 1918 costs of three groups of canned-milk manufacturers: Large, medium-sized, and small.

TABLE 54.—*Comparison of average costs of delivering a quart of milk at retail and wholesale for certain large dealers with the average costs of all dealers covered by the Boston report for the 12 months ending Sept. 30, 1935*¹

	Large dealers— cost per quart	All dealers— cost per quart		Large dealers— cost per quart	All dealers— cost per quart
Retail delivery:			Wholesale delivery:		
City plant.....	\$0. 0073	\$0. 0085	City plant.....	\$0. 0073	\$0. 0085
Containers.....	. 0017	. 0017	Containers.....	. 0012	. 0012
Delivery.....	. 0457	. 0425	Delivery.....	. 0199	. 0204
Interest.....	. 0009	. 0009	Interest.....	. 0008	. 0008
Total.....	. 0556	. 0536	Total.....	. 0292	. 0309

¹ The large dealers represented were in a group comprising 7.2 percent of the total number covered. This group distributed over 70 percent of the milk at retail and over 90 percent of the milk at wholesale.

Source: Massachusetts Milk Control Board.

COMMENTS ON TABLE 54

(a) Inquiry was conducted by the Massachusetts Milk Control Board.

(b) Basis for size classification of companies not indicated in the report of the board.

(c) Dealers classified by the board as "large" had higher than average retail-delivery costs and lower than average wholesale-delivery costs.

TABLE 55.—*Estimated costs per quart of fluid milk sold for 2 large, 2 medium-sized, and 2 small distributors in Milwaukee, 1933*

	2 large— cost per quart sold	2 medi- um-sized— cost per quart sold	2 small— cost per quart sold
	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
Processing.....	1.024	0.876	1.306
Delivery.....	1.875	1.318	1.910
Selling.....	.174	.086	.027
General and administrative.....	.215	.322	.334
Total.....	3.288	2.602	3.577

Source: U. S. Department of Agriculture,

COMMENTS ON TABLE 55

(a) The Milwaukee survey was conducted by the United States Department of Agriculture.

(b) According to an expert of the Department, the two large, two medium-sized, and two small distributors were typical of large, medium-sized, and small distributors in Milwaukee.

(c) The two medium-sized distributors had a lower average cost of processing and distributing fluid milk than the two large or the two small distributors.

(d) Retail delivery costs represent a very large proportion of the total cost of milk to the consumer.

TABLE 56.—*Costs of distributing 100 pounds of milk by 22 dealers in West Virginia for the year 1933, arranged in order of ascending costs*

Plant No.—	Pounds of milk purchased	Plant cost per 100 pounds	Delivery and sales cost per 100 pounds	Total dis- tributing cost per 100 pounds
1.....	2,896,600	\$0.5104	\$0.4543	\$1.410
2.....	393,330	.8237	.3958	1.514
3.....	892,152	.7498	.7229	1.717
4.....	1,414,204	.7634	.5669	1.778
5.....	5,341,072	.4446	.8084	1.781
6.....	1,786,966	.5753	.7275	1.855
7.....	253,813	.8292	.6994	1.929
8.....	1,767,190	.6925	.6859	1.961
9.....	3,639,374	.7564	.8607	1.994
10.....	3,037,872	.6003	.8559	2.021
11.....	1,510,492	.6957	.6175	2.052
12.....	1,003,157	.8364	.8497	2.239
13.....	353,835	.2959	1.2071	2.239
14.....	717,814	.7756	1.1560	2.276
15.....	2,726,911	.6933	.8772	2.352
16.....	2,294,225	.7819	.8218	2.352
17.....	3,080,152	.6428	1.0892	2.362
18.....	203,228	.9850	.7708	2.447
19.....	244,088	1.0559	.9140	2.484
20.....	1,114,500	.7431	.8780	2.489
21.....	1,499,155	.9384	1.0438	2.775
22.....	416,624	.9563	1.0692	2.911
Average.....	1,663,034	.658	.811	2.050

Source: College of Agriculture, West Virginia University.

COMMENTS ON TABLE 56

(a) Survey of West Virginia was conducted by the State's agricultural college.

(b) The value of this table for the purposes of this inquiry is limited by the fact that retail and wholesale distribution costs are not separated.

(c) The largest company did not show the lowest combined retail and wholesale costs.

TABLE 57.—Cost of distributing 100 pounds of milk by 9 retail dealers in West Virginia for the year 1933, arrayed in order of ascending costs

Pounds of milk produced.	Delivery and sales cost per 100 pounds	Total distributing cost expense per 100 pounds
2, 896, 600	\$0. 4543	\$1. 410
393, 330	. 3958	1. 514
892, 152	. 7229	1. 717
1, 414, 204	. 5669	1. 778
5, 341, 072	. 8084	1. 781
253, 813	. 6894	1. 929
1, 510, 492	. 6175	2. 052
203, 228	. 7708	2. 447
244, 088	. 9140	2. 484

Source: College of Agriculture, West Virginia University.

COMMENTS ON TABLE 57

(a) Table 57 shows the costs of nine retail milk distributors in West Virginia.

(b) The largest retail distributor covered by the survey had average costs as compared with other retail distributors.

(c) Four retail distributors, considerably smaller in size, had lower costs than the largest distributor.

TABLE 58

COST OF RETAIL AND WHOLESALE DELIVERY PER QUART OF FLUID MILK (GRADE B) FOR 5 CONNECTICUT DISTRIBUTORS DURING JUNE 1934

Size of company	Retail cost per quart	Wholesale cost per quart
	<i>Cents</i>	<i>Cents</i>
Smaller.....	2. 85	0. 79
Do.....	2. 97	. 65
Larger.....	4. 04	1. 48
Do.....	4. 04	2. 06
Do.....	4. 15	

COSTS OF RETAIL DELIVERY PER QUART OF FLUID MILK (ORDINARY PASTEURIZED) FOR 5 CINCINNATI DISTRIBUTORS DURING OCTOBER 1935, ARRANGED IN ORDER OF ASCENDING COSTS

Size of company	Cost per quart	Size of company	Cost per quart
	<i>Cents</i>		<i>Cents</i>
Smaller.....	3. 70	Larger.....	4. 71
Do.....	3. 75	Smaller.....	4. 75
Larger.....	4. 42		

TABLE 58—Continued

COSTS OF COMBINED RETAIL AND WHOLESALE DELIVERY PER QUART OF FLUID MILK (GRADE B) FOR 7 PHILADELPHIA DISTRIBUTORS DURING OCTOBER, 1934, ARRANGED IN ORDER OF ASCENDING COSTS.

Size of company	Business	Cost per quart
		<i>Cents</i>
Smaller.....	Retail and wholesale.....	2.37
Do.....	do.....	2.70
Larger.....	do.....	2.75
Smaller.....	do.....	2.87
Larger.....	do.....	2.96
Smaller.....	do.....	3.11
Larger.....	Retail.....	3.18

Source: Federal Trade Commission files.

COMMENTS ON TABLE 58

(a) The surveys showing monthly costs for Connecticut, Cincinnati, and Philadelphia were conducted by the Federal Trade Commission.

(b) The Commission did not indicate the basis for its size classifications: "Larger" and "smaller."

(c) Some of the companies designated "smaller" as well as some designated "larger" were subsidiaries of the National Dairy Products Corporation, the largest milk and milk-products company in the United States.

(d) The Federal Trade Commission did not draw definite conclusions as to the relation between size and cost from these data. Table 58, however, indicates that the larger distributors did not have the lowest costs.

TABLE 59.—Costs per pound of butter for centralizers of different size in 1918

Range of company production per company	Number of companies	Number of plants	Butterfat cost per pound of butter	Collection cost per pound of butter	Total cost per pound of butter
Over 20,000,000 pounds.....	2	13	\$0.3891	\$0.0351	\$0.4737
10,000,000 to 20,000,000 pounds.....	5	37	.4056	.0241	.4337
5,000,000 to 10,000,000 pounds.....	7	26	.4009	.0324	.4332
1,000,000 to 5,000,000 pounds.....	12	14	.3937	.0333	.4694
Under 1,000,000 pounds.....	8	10	.4101	.0187	.4956

Source: Federal Trade Commission files.

COMMENTS ON TABLE 59

(a) The lowest average cost shown for a group of centralizers was for the group containing 12 companies with production in 1918 of from 1,000,000 to 5,000,000 pounds of butter. All the 12 companies in this group were small.

(b) Low butterfat costs shown by the group of largest centralizers are explained by their practice of drawing cream from distant regions, where it was cheap. Further proof of this contention is the high cream-collection costs of these centralizers.

(c) High average butterfat costs and low average collection costs of 8 smallest butter producers in the table are explained by their use of fresh cream produced near the creameries. Such fresh-cream butter is generally of high grade and usually commands a good price.

TABLE 60.—*Ranks of 6 largest and 3 lowest-cost butter producers for 5 years, 1914-18*¹

Company	Total production, 5 years	1914	1915	1916	1917	1918
<i>Pounds</i>						
6 largest producers:						
A.....	91,484,644	4	10	11	6	8
B.....	92,588,791	12	18	21	23	20
C.....	80,283,130	7	8	13	12	11
D.....	52,009,069	9	11	8	3	4
E.....	40,432,665	14	20	25	22	22
F.....	37,834,380	3	3	2	5	7
3 lowest-cost producers:						
G.....	2,160,763	1	1	3	7	3
F.....	37,834,380	3	3	2	5	7
H.....	2,741,327	5	6	10	2	6
Total number of companies covered.....		15	20	25	25	25

¹ Company with lowest cost had rank 1, etc.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 60

(a) Conclusions from data for 1914 are most reliable because the industry was less affected by abnormal conditions in 1914 than in the 4 later years.

(b) In 1914 the largest of the 15 companies represented had the fourth lowest cost.

(c) The second largest producer, almost as large as the largest producer, had one of the highest costs.

(d) Lowest-cost producer was a small producer.

(e) For the period as a whole, the largest producers as a group did not have low costs.

(f) Two very small producers and 1 medium-sized producer had the lowest costs for the period as a whole.

TABLE 61.—*Costs of evaporated milk per case, in 1918 of large, medium-sized, and small companies*

Company group	Number of companies	Number of plants	Average production per company ("talls")	Average cost per case of "talls"
Large.....	6	76	2,066,781	\$5.018
Medium-sized.....	9	21	434,797	4.751
Small.....	28	34	68,716	5.137

Source: Federal Trade Commission Report on Milk and Milk Products, p. 49.

COMMENTS ON TABLE 61

(a) Size classifications of evaporated milk companies based on 1918 production are as follows:

Large.—Companies producing over 600,000 cases.

Medium-sized.—Companies producing between 200,000 and 600,000 cases.

Small.—Companies producing less than 200,000 cases.

(b) Group of medium-sized companies had the lowest average costs.

(c) Plants of 9 medium-sized companies were on the average larger than the plants of the 6 largest companies.

(d) Largest companies obviously attained size by absorbing other companies and plants.

WHEAT FLOUR AND BREAD COST TABLES

Tables 62, 63, and 64 show the milling costs, exclusive of the cost of wheat, and the selling and advertising costs of flour mills of different size for the first 6 months of 1926, 1927, and 1928 and for crop years 1935-36, 1936-37, and 1937-38. These figures were collected by the millers themselves.

Table 65 gives the average costs (for the 5-year period 1913-14 through 1917-18) of flour-milling companies grouped into three classes according to size.

Tables 66, 67, 68, and 69 give the costs of individual flour-milling companies in 1913. In the first table total costs include cost of wheat and packages; in the second table, costs include everything but cost of packages; in the third table, costs include everything but cost of wheat; in the fourth table costs include everything but costs of wheat and package.

Tables 70, 71, 72, and 73 show the costs of wheat flour for 1922, according to the same arrangement described for 1913.

Table 74 shows the costs of groups of bread plants of different size, averaged for the 4 years from 1922 through 1925.

Table 75 shows the cost ranks (according to positions in cost series) of the largest baking companies in 1920, 1921, 1922, 1923, and 1924.

Table 76 shows the cost ranks (according to positions in cost series) of largest baking companies in 1925.

Table 77 shows for 1920, 1921, 1922, 1923, and 1924 the cost ranks (according to positions in cost series) of 15 companies absorbed by the Continental Baking Corporation at the end of 1924.

TABLE 62.—*Costs per barrel of wheat flour (exclusive of wheat costs) for flour mills of different capacities for the three six-months periods ending June 30, 1926, June 30, 1927, and June 30, 1928*¹

Range of capacity of flour mills	Costs per barrel of flour, ² periods ending—			
	June 30, 1926	June 30, 1927	June 30, 1928	Simple average
800,000 barrels and over.....	\$1.111	\$1.172	\$0.992	\$1.092
400,000 to 800,000 barrels.....	1.342	.971	1.032	1.115
200,000 to 400,000 barrels.....	1.037	1.036	1.020	1.031
Below 200,000 barrels.....	1.337	.963	1.033	1.121

¹ Comparison of costs, Millers' National Federation, Nov. 10, 1928, table III.

² These milling costs do not include cost of wheat, but they do include all manufacturing, administrative, and selling expense. Interest paid is also included, but apparently no allowance is made for interest on the stockholders' investment.

Source: Millers' National Federation.

COMMENTS ON TABLE 62

(a) Number of companies covered: First 6 months 1926, 57; first 6 months 1927, 85; first 6 months 1928, 90.

(b) Group with lowest average milling cost in 1926 included mills with annual capacity of from 200,000 to 400,000 barrels, i. e., small mills.

(c) Group with lowest average milling cost in 1927 included mills with annual capacity of from 400,000 to 800,000 barrels, i. e., medium-sized mills.

(d) Group with lowest average milling cost in 1928 included mills with annual capacity of 800,000 barrels or over, i. e., large mills.

(e) Some of the mills in the group with annual capacity of 800,000 barrels or over, however, were medium-sized rather than large. During the period covered there were quite a few mills with annual capacity of 800,000 barrels or over. Of these perhaps 5 were really large with annual capacity of 3,000,000 barrels or over. When compared with these really large mills the others included in the group may have been only medium-sized.

TABLE 63.—*Costs per barrel of wheat flour (exclusive of wheat cost) for flour mills of different size for the 3-crop years 1935-36, 1936-37, and 1937-38*

Range of production of flour mills	Costs per barrel of flour ¹			
	1935-36	1936-37	1937-38	Simple average
Under 50,000 barrels.....	\$1.174	\$1.172	\$1.352	\$1.233
50,000 to 100,000 barrels.....	1.078	1.155	1.127	1.120
100,000 to 200,000 barrels.....	.946	.935	.955	.959
200,000 to 400,000 barrels.....	1.008	.973	1.025	1.002
400,000 to 800,000 barrels.....	.997	1.012	1.085	1.031
800,000 to 1,600,000 barrels.....	1.078	1.085	1.050	1.071
1,600,000 barrels and over.....	1.011	1.018	1.022	1.017

¹ These milling costs do not include cost of wheat, but they do include all manufacturing, administrative, and selling expense. Interest paid is also included, but apparently no allowance is made for interest on the stockholders' investment.

Source: Millers' National Federation.

COMMENTS ON TABLE 63

(a) Number of mills covered: 1935-36, 146; 1936-37, 120; 1937-38, 125.

(b) Group containing largest mills did not show the lowest costs in any of the 3 years.

TABLE 64.—*Selling, advertising, and miscellaneous expenses per barrel of flour for groups of flour mills of different size: 1935-36, 1936-37, and 1937-38 averaged*

Range of production of flour mills	Advertising expenses per barrel	Outside and branch selling costs per barrel	Service expense-storage and cartage per barrel
49,999 barrels or less.....	\$0.022	\$0.129	\$0.033
50,000 to 99,999 barrels.....	.032	.154	.026
100,000 to 199,999 barrels.....	.025	.150	.015
200,000 to 399,999 barrels.....	.046	.185	.024
400,000 to 799,999 barrels.....	.077	.204	.011
800,000 to 1,599,999 barrels.....	.083	.255	.044
1,600,000 barrels and over.....	.107	.227	.028
Industry average.....	.087	.216	.028

Source: Millers' National Federation.

COMMENTS ON TABLE 64

(a) The larger the flour mill, the heavier was its advertising and selling expense.

TABLE 65.—*Costs, prices, and profits of 38 flour-milling companies of different size for the 5-year period 1913-14 to 1917-18*

Company groups, classified by size of annual production	Number of companies	Cost per barrel ¹	Price per barrel	Profit per barrel
I. Under 300,000 barrels.....	17	\$6.49	\$6.73	\$0.29
II. 300,000 to 700,000 barrels.....	14	6.14	6.45	.31
III. Over 1,000,000 barrels.....	7	6.30	6.64	.34

¹ Including wheat cost.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 65

(a) Group containing relatively small or medium-sized companies with average annual production of from 300,000 to 700,000 barrels during the period between 1913-14 and 1917-18 had the lowest average costs shown for any of the 3 groups.

(b) This medium-sized lowest-cost group realized the lowest average price.

TABLE 66.—*Total costs of producing a barrel of wheat flour (including cost of wheat and packages) in 1913 by companies of different size, arranged in order of ascending costs*¹

Classification of company according to size of production	Total flour costs per barrel	Classification of company according to size of production	Total flour costs per barrel
1. Small.....	\$3.53	21. Small.....	\$4.11
2. Small.....	3.56	22. Small.....	4.11
3. Medium.....	3.58	23. Small.....	4.12
4. Small.....	3.59	24. Small.....	4.17
5. Small.....	3.71	25. Medium.....	4.18
6. Medium.....	3.75	26. Small.....	4.24
7. Small.....	3.76	27. Medium.....	4.27
8. Medium.....	3.86	28. Small.....	4.27
9. Large.....	3.88	29. Small.....	4.37
10. Medium.....	3.91	30. Small.....	4.38
11. Small.....	3.92	31. Small.....	4.49
12. Medium.....	3.95	32. Small.....	4.49
13. Small.....	3.98	33. Small.....	4.54
14. Medium.....	4.00	34. Medium.....	4.64
15. Medium.....	4.00	35. Small.....	4.78
16. Small.....	4.06	36. Small.....	4.82
17. Large.....	4.06	37. Medium.....	4.91
18. Small.....	4.07	38. Small.....	5.10
19. Small.....	4.08	39. Small.....	5.14
20. Medium.....	4.08	40. Small.....	5.25

¹ Credit for feed excluded.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 66

(a) Size classification of companies in 1913:

Large.—Washburn-Crosby Co., Pillsbury Flour Mills Co.

Medium-sized.—Other companies with annual production over 500,000 barrels.

Small.—Companies with annual production under 500,000 barrels.

(b) Table 66 shows that eight small and medium-sized flour-milling companies had unit costs lower than that of the lowest-cost large company (No. 9).

(c) The other large company (No. 17) had a cost but little lower than the median cost.

TABLE 67.—*Costs of producing a barrel of wheat flour (including cost of wheat but excluding costs of packages) in 1913 by companies of different size, arranged in order of ascending costs*¹

Classification of companies according to size	Total flour costs per barrel but excluding costs of packages	Classification of companies according to size	Total flour costs per barrel but excluding costs of packages
1. Small.....	\$3.30	21. Small.....	\$3.86
2. Small.....	3.32	22. Small.....	3.87
3. Small.....	3.34	23. Medium.....	3.92
4. Medium.....	3.41	24. Small.....	3.93
5. Small.....	3.42	25. Small.....	4.00
6. Small.....	3.52	26. Small.....	4.01
7. Medium.....	3.53	27. Medium.....	4.02
8. Medium.....	3.61	28. Small.....	4.04
9. Medium.....	3.61	29. Small.....	4.12
10. Small.....	3.64	30. Small.....	4.12
11. Large.....	3.66	31. Small.....	4.13
12. Medium.....	3.71	32. Small.....	4.23
13. Medium.....	3.72	33. Medium.....	4.23
14. Medium.....	3.73	34. Small.....	4.30
15. Small.....	3.75	35. Small.....	4.54
16. Medium.....	3.77	36. Small.....	4.54
17. Large.....	3.78	37. Medium.....	4.56
18. Small.....	3.82	38. Small.....	4.83
19. Small.....	3.83	39. Small.....	4.87
20. Small.....	3.85	40. Small.....	4.96

¹ Credit for feed also excluded.

Source: Federal Trade Commission.

COMMENTS ON TABLE 67

(a) Size classification of companies: Same as in table 66.

(b) Cost positions of two large companies not improved in cost series, when package costs are excluded.

TABLE 68.—*Cost of producing a barrel of wheat flour (excluding cost of wheat but including costs of packages) in 1913 by companies of different size, arranged in order of ascending costs*¹

Classification of company according to size of production	Milling and miscellaneous costs per barrel, including costs of packages	Classification of company according to size of production	Milling and miscellaneous costs per barrel, including costs of packages
1. Small.....	\$0.48	21. Medium.....	\$0.75
2. Small.....	.54	22. Small.....	.75
3. Small.....	.56	23. Small.....	.75
4. Small.....	.57	24. Large.....	.76
5. Medium.....	.57	25. Medium.....	.76
6. Small.....	.60	26. Small.....	.77
7. Small.....	.63	27. Medium.....	.80
8. Medium.....	.65	28. Small.....	.81
9. Large.....	.66	29. Medium.....	.81
10. Medium.....	.66	30. Medium.....	.82
11. Small.....	.66	31. Small.....	.82
12. Small.....	.67	32. Small.....	.82
13. Small.....	.69	33. Small.....	.85
14. Small.....	.70	34. Small.....	.86
15. Small.....	.71	35. Small.....	.89
16. Small.....	.71	36. Medium.....	.90
17. Small.....	.72	37. Small.....	.99
18. Small.....	.72	38. Medium.....	1.05
19. Medium.....	.73	39. Medium.....	1.08
20. Small.....	.74	40. Small.....	1.29

¹ Credit for feed also excluded.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 68

(a) Size classification of companies: Same as in table 66.

(b) Position of large companies in cost series not improved by excluding cost of wheat.

TABLE 69.—*Costs of producing a barrel of wheat flour (excluding cost of wheat and packages) in 1913 by companies of different size, arranged in order of ascending costs*¹

Classification of company according to size of production	Milling and miscellaneous costs per barrel, after excluding costs of wheat and packages	Classification of company according to size of production	Milling and miscellaneous costs per barrel, after excluding costs of wheat and packages
1. Small.....	\$0.32	21. Small.....	\$0.49
2. Small.....	.34	22. Small.....	.49
3. Small.....	.34	23. Medium.....	.50
4. Small.....	.37	24. Small.....	.50
5. Small.....	.37	25. Medium.....	.51
6. Small.....	.38	26. Medium.....	.52
7. Medium.....	.40	27. Small.....	.52
8. Medium.....	.40	28. Medium.....	.54
9. Small.....	.41	29. Small.....	.54
10. Small.....	.43	30. Medium.....	.55
11. Small.....	.44	31. Small.....	.55
12. Medium.....	.44	32. Small.....	.56
13. Large.....	.44	33. Small.....	.58
14. Small.....	.45	34. Small.....	.59
15. Medium.....	.45	35. Medium.....	.59
16. Small.....	.46	36. Small.....	.61
17. Small.....	.47	37. Small.....	.62
18. Small.....	.47	38. Medium.....	.64
19. Small.....	.48	39. Medium.....	.73
20. Large.....	.48	40. Small.....	1.02

¹ Credit for feed deducted.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 69

(a) Size classification of companies: Same as in table 66.

(b) There were 12 small and medium-sized companies that had lower milling and miscellaneous costs than the lowest-cost large company.

(c) The other large company had a median position in the array of milling and miscellaneous costs.

TABLE 70.—Costs of a barrel of wheat flour (including cost of wheat and packages) in 1922 by companies of different size, arranged in order of ascending costs ¹

Classification of company according to size of production	Total costs per barrel including packages	Classification of company according to size of production	Total costs per barrel including packages
1. Small	\$4.87	48. Large	\$5.89
2. Small	4.94	49. Small	5.95
3. Medium	4.97	50. Small	5.96
4. Small	4.99	51. Small	5.97
5. Medium	5.00	52. Small	5.97
6. Small	5.03	53. Medium	6.03
7. Small	5.06	54. Small	6.08
8. Small	5.06	55. Small	6.09
9. Small	5.08	56. Small	6.10
10. Small	5.10	57. Small	6.10
11. Small	5.11	58. Small	6.13
12. Small	5.14	59. Small	6.15
13. Small	5.15	60. Small	6.15
14. Medium	5.19	61. Small	6.16
15. Small	5.22	62. Small	6.17
16. Small	5.22	63. Small	6.18
17. Small	5.23	64. Small	6.19
18. Small	5.29	65. Small	6.21
19. Small	5.32	66. Small	6.24
20. Small	5.33	67. Large	6.24
21. Small	5.36	68. Small	6.26
22. Small	5.37	69. Large	6.31
23. Medium	5.41	70. Small	6.34
24. Small	5.42	71. Small	6.39
25. Small	5.43	72. Small	6.42
26. Small	5.43	73. Small	6.43
27. Small	5.44	74. Small	6.44
28. Small	5.46	75. Small	6.45
29. Small	5.47	76. Small	6.49
30. Small	5.48	77. Small	6.50
31. Medium	5.52	78. Medium	6.56
32. Small	5.55	79. Small	6.57
33. Small	5.56	80. Small	6.59
34. Small	5.61	81. Small	6.64
35. Small	5.65	82. Small	6.65
36. Medium	5.66	83. Small	6.74
37. Medium	5.69	84. Small	6.76
38. Small	5.72	85. Medium	6.82
39. Medium	5.73	86. Small	6.83
40. Small	5.74	87. Small	6.91
41. Small	5.75	88. Small	6.96
42. Small	5.76	89. Medium	6.98
43. Small	5.76	90. Small	7.25
44. Small	5.78	91. Small	7.48
45. Small	5.84	92. Small	7.60
46. Small	5.87	93. Small	7.71
47. Small	5.88	94. Small	8.12

¹ Credit for feed deducted.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 70

(a) Size classification of companies in 1922:

Large.—Washburn-Crosby Co., Pillsbury Flour Mills Co., and Standard Milling Co.*Medium-sized*.—Other companies with annual production of over 500,000 barrels.*Small*.—Companies with annual production under 500,000 barrels.

(b) Table 70 shows that three large companies had relatively high total costs of producing a barrel of flour.

TABLE 71.—*Costs of producing a barrel of wheat flour (including cost of wheat but excluding costs of packages) in 1922 by companies of different size, arranged in order of ascending costs*¹

Classification of company according to size	Total flour costs per barrel excluding packages	Classification of company according to size	Total flour costs per barrel excluding packages
1. Small.....	\$4.75	48. Small.....	\$5.63
2. Small.....	4.78	49. Large.....	5.64
3. Medium.....	4.78	50. Small.....	5.69
4. Small.....	4.79	51. Small.....	5.72
5. Small.....	4.79	52. Small.....	5.76
6. Medium.....	4.80	53. Small.....	5.77
7. Small.....	4.83	54. Medium.....	5.78
8. Small.....	4.83	55. Small.....	5.79
9. Small.....	4.86	56. Small.....	5.82
10. Medium.....	4.86	57. Small.....	5.82
11. Small.....	4.90	58. Small.....	5.83
12. Small.....	4.91	59. Small.....	5.90
13. Small.....	4.92	60. Small.....	5.92
14. Small.....	4.93	61. Small.....	5.92
15. Small.....	4.97	62. Small.....	5.97
16. Small.....	4.97	63. Small.....	5.98
17. Small.....	4.99	64. Small.....	5.99
18. Small.....	5.04	65. Small.....	5.99
19. Medium.....	5.06	66. Small.....	6.00
20. Small.....	5.08	67. Large.....	6.01
21. Small.....	5.12	68. Small.....	6.01
22. Small.....	5.13	69. Small.....	6.01
23. Medium.....	5.15	70. Large.....	6.04
24. Small.....	5.18	71. Small.....	6.06
25. Small.....	5.18	72. Small.....	6.07
26. Small.....	5.18	73. Small.....	6.08
27. Small.....	5.19	74. Small.....	6.11
28. Small.....	5.22	75. Small.....	6.12
29. Small.....	5.22	76. Small.....	6.19
30. Small.....	5.26	77. Small.....	6.20
31. Medium.....	5.30	78. Small.....	6.22
32. Small.....	5.31	79. Small.....	6.31
33. Small.....	5.32	80. Small.....	6.33
34. Small.....	5.33	81. Medium.....	6.37
35. Small.....	5.36	82. Small.....	6.40
36. Medium.....	5.37	83. Small.....	6.49
37. Medium.....	5.39	84. Small.....	6.49
38. Small.....	5.41	85. Medium.....	6.53
39. Small.....	5.42	86. Small.....	6.61
40. Small.....	5.42	87. Small.....	6.62
41. Small.....	5.45	88. Medium.....	6.72
42. Small.....	5.48	89. Small.....	6.76
43. Small.....	5.49	90. Small.....	6.86
44. Small.....	5.50	91. Small.....	7.13
45. Small.....	5.51	92. Small.....	7.41
46. Small.....	5.52	93. Small.....	7.43
47. Small.....	5.54	94. Small.....	7.64

¹ Credit for feed produced was excluded.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 71

- (a) Size classification of companies: Same as in table 70.
- (b) Cost positions of large companies not improved by excluding cost of packages.

TABLE 72.—Costs of producing a barrel of wheat flour (excluding cost of wheat) in 1922 by companies of different size, arranged in order of ascending costs ¹

Classification of company according to size of production	Milling and miscellaneous costs per barrel, including package costs	Classification of company according to size of production	Milling and miscellaneous costs per barrel, including package costs
1. Small.....	\$0.59	48. Small.....	\$1.03
2. Small.....	.63	49. Small.....	1.03
3. Small.....	.63	50. Small.....	1.05
4. Large.....	.69	51. Small.....	1.08
5. Small.....	.70	52. Small.....	1.09
6. Medium.....	.71	53. Small.....	1.09
7. Small.....	.72	54. Small.....	1.10
8. Small.....	.73	55. Small.....	1.10
9. Small.....	.73	56. Small.....	1.10
10. Medium.....	.74	57. Small.....	1.11
11. Small.....	.75	58. Small.....	1.11
12. Small.....	.75	59. Medium.....	1.13
13. Small.....	.76	60. Medium.....	1.13
14. Small.....	.77	61. Small.....	1.14
15. Small.....	.78	62. Medium.....	1.15
16. Small.....	.78	63. Small.....	1.15
17. Large.....	.78	64. Small.....	1.16
18. Small.....	.79	65. Small.....	1.17
19. Medium.....	.80	66. Medium.....	1.18
20. Small.....	.81	67. Small.....	1.18
21. Small.....	.81	68. Small.....	1.19
22. Small.....	.82	69. Medium.....	1.21
23. Small.....	.82	70. Small.....	1.22
24. Small.....	.84	71. Small.....	1.23
25. Small.....	.85	72. Medium.....	1.24
26. Small.....	.85	73. Small.....	1.26
27. Medium.....	.85	74. Small.....	1.28
28. Small.....	.86	75. Small.....	1.28
29. Small.....	.86	76. Small.....	1.31
30. Small.....	.86	77. Small.....	1.31
31. Medium.....	.87	78. Small.....	1.33
32. Small.....	.87	79. Small.....	1.40
33. Small.....	.89	80. Small.....	1.41
34. Small.....	.89	81. Small.....	1.46
35. Small.....	.91	82. Small.....	1.46
36. Small.....	.91	83. Small.....	1.46
37. Small.....	.93	84. Small.....	1.47
38. Small.....	.93	85. Small.....	1.53
39. Small.....	.94	86. Small.....	1.55
40. Large.....	.94	87. Small.....	1.56
41. Small.....	.96	88. Small.....	1.57
42. Small.....	.97	89. Small.....	1.63
43. Small.....	.98	90. Small.....	1.69
44. Medium.....	.99	91. Small.....	1.77
45. Small.....	.99	92. Small.....	1.80
46. Small.....	1.02	93. Small.....	1.81
47. Small.....	1.02	94. Small.....	2.10

¹ Credit for feed also excluded.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 72

(a) Size classification: Same as in table 70.

(b) One of the large companies showed a relatively low cost, when cost of wheat was excluded.

TABLE 73.—*Costs of producing a barrel of wheat flour (excluding cost of wheat and packages) in 1922 by companies of different size, arranged in order of ascending costs*¹

Classification of company according to size of production	Milling and miscellaneous costs per barrel exclusive of package costs	Classification of company according to size of production	Milling and miscellaneous costs per barrel exclusive of package costs
1. Large.....	\$0.44	48. Medium.....	\$0.75
2. Small.....	.46	49. Small.....	.75
3. Small.....	.46	50. Small.....	.76
4. Small.....	.50	51. Small.....	.78
5. Small.....	.51	52. Medium.....	.79
6. Small.....	.51	53. Small.....	.79
7. Medium.....	.52	54. Small.....	.80
8. Medium.....	.52	55. Small.....	.80
9. Small.....	.53	56. Small.....	.82
10. Small.....	.53	57. Medium.....	.82
11. Small.....	.54	58. Small.....	.83
12. Medium.....	.55	59. Small.....	.84
13. Large.....	.55	60. Small.....	.84
14. Small.....	.56	61. Small.....	.84
15. Small.....	.56	62. Small.....	.84
16. Small.....	.57	63. Small.....	.85
17. Small.....	.57	64. Small.....	.85
18. Small.....	.57	65. Small.....	.86
19. Small.....	.58	66. Medium.....	.87
20. Small.....	.59	67. Small.....	.88
21. Medium.....	.60	68. Medium.....	.89
22. Small.....	.61	69. Small.....	.89
23. Small.....	.62	70. Small.....	.91
24. Small.....	.62	71. Small.....	.91
25. Medium.....	.62	72. Small.....	.93
26. Small.....	.63	73. Small.....	.93
27. Small.....	.64	74. Medium.....	.95
28. Small.....	.65	75. Small.....	.98
29. Small.....	.65	76. Small.....	1.00
30. Small.....	.65	77. Small.....	1.02
31. Small.....	.66	78. Small.....	1.04
32. Small.....	.67	79. Small.....	1.04
33. Medium.....	.67	80. Small.....	1.07
34. Small.....	.67	81. Small.....	1.08
35. Large.....	.67	82. Small.....	1.09
36. Small.....	.69	83. Small.....	1.11
37. Small.....	.69	84. Small.....	1.12
38. Small.....	.69	85. Small.....	1.12
39. Small.....	.69	86. Small.....	1.19
40. Small.....	.70	87. Small.....	1.19
41. Small.....	.71	88. Small.....	1.30
42. Small.....	.72	89. Small.....	1.32
43. Small.....	.72	90. Small.....	1.41
44. Small.....	.72	91. Small.....	1.42
45. Small.....	.73	92. Small.....	1.54
46. Small.....	.73	93. Small.....	1.61
47. Small.....	.74	94. Small.....	1.85

¹ Credit for feed also excluded.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 73

(a) Size classification of companies: Same as in table 70.

(b) One of the large companies had the lowest manufacturing cost, i. e., total cost exclusive of wheat and package costs.

TABLE 74.—*Total unit costs, unit costs exclusive of ingredients, and profit per pound for bread made in exclusively wholesale baking plants of different size, years 1922-25 combined*

Production per plant in pounds per year	Total cost per pound	Cost exclusive of ingredients, per pound	Profit, per pound
	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
Under 2,500,000.....	7.419	4.144	0.194
2,500,000 to 5,000,000.....	6.986	3.748	.312
5,000,000 to 7,500,000.....	6.913	3.704	.495
7,500,000 to 10,000,000.....	6.964	3.770	.514
Under 5,000,000.....	7.076	3.830	.287
5,000,000 to 10,000,000.....	6.937	3.735	.504
10,000,000 to 15,000,000.....	6.592	3.471	.559
15,000,000 to 20,000,000.....	6.366	3.256	.933
20,000,000 to 25,000,000.....	6.492	3.281	.967
25,000,000 to 30,000,000.....	6.535	3.253	.979
30,000,000 to 35,000,000.....	6.565	3.366	.691
Over 35,000,000.....	7.005	3.670	.701
Average.....	6.689	3.498	.697

Source: Federal Trade Commission.

COMMENTS ON TABLE 74

(a) Three standards used in judging efficiency of bread plants necessary because different bakeries use different kinds of ingredients to make different kinds of bread. These different kinds of bread are of different quality and bring different prices.

(b) When total cost is used as the criterion, the lowest-cost plants were those with production of from 15,000,000 to 20,000,000 pounds. When cost exclusive of ingredients is used as the criterion, lowest costs were those of plants with production of from 25,000,000 to 30,000,000 pounds. When the three criteria are considered jointly, the most efficient plants were those with production of from 15,000,000 to 30,000,000 pounds.

(c) Largest plants were not most efficient by any of the three criteria.

(d) Some of the medium-sized, low-cost plants belonged to the largest baking companies.

TABLE 75.—*Ranks of General Baking Corporation, United Bakeries Corporation, and Ward Baking Corporation according to 3 criteria—total costs per pound, costs excluding ingredients per pound, and profit per pound, 1920, 1921, 1922, 1923, and 1924*

	1920	1921	1922	1923	1924
General Baking Corporation:					
Ranks according to:					
Total costs per pound.....	17	7	1	3	5
Costs excluding ingredients per pound.....	10	10	3	5	6
Profit per pound.....	7	3	3	5	3
United Bakeries Corporation:					
Ranks according to:					
Total costs per pound.....	(1)	(1)	(1)	20	11
Costs excluding ingredients per pound.....	(1)	(1)	(1)	29	21
Profit per pound.....	(1)	(1)	(1)	43	14
Ward Baking Corporation:					
Ranks according to:					
Total costs per pound.....	31	27	62	61	32
Costs excluding ingredients per pound.....	29	32	62	56	28
Profit per pound.....	23	16	59	62	21
Total number of baking companies in arrays.....	36	40	75	74	70

¹ Data not available.

Source: Federal Trade Commission.

COMMENTS ON TABLE 75

(a) General Baking Corporation was the largest company before 1924. Continental Baking Co., formed at the end of 1924, became the largest baking company thereafter.

(b) For the period 1920 through 1924 General Baking Corporation had the lowest costs shown by any of the three larger companies.

(c) Only in 1922, however, did it have the best rank shown for any company, and then according to one criterion only.

TABLE 76.—*Rank according to total cost per pound of bread, cost minus ingredients, and profit per pound of 4 largest companies in an array of 51 companies in 1925.*¹

	Rank according to—		
	Total cost per pound	Cost minus ingredients, per pound	Profit, per pound
Continental.....	18	21	11
General.....	5	5	3
Ward.....	20	22	14
Purity.....	27	39	20

¹ Company with lowest cost has rank 1. and company with largest profit has rank 1.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 76

(a) Size classification of companies: Continental Baking Corporation has been by far the largest baking corporation since 1925. General Baking Corporation, Ward Baking Corporation, and Purity Bakeries Corporation have been medium-sized as compared with the largest company. United Bakeries Corporation was the largest company absorbed by the Continental Baking Corporation.

(b) There were 51 companies in the cost series used to derive the cost ranks of the four largest baking companies shown in table 76.

(c) Of the 51 companies 17 had lower total costs per pound of bread than Continental, 20 had lower costs minus ingredients, and 10 had larger profits per pound.

(d) General Baking Corporation's record was much better than that of the Continental Baking Corporation in 1925. There were only three or four companies that had lower total costs, lower costs minus ingredients, and larger profits per pound than the General Baking Corporation.

TABLE 77.—*Ranks of 15 companies absorbed by Continental Baking Corporation, according to various criteria*

Company No.	Average production in pounds per year	Ranks according to total costs per pound of bread					Ranks according to costs minus ingredients per pound of bread					Ranks according to profits per pound of bread				
		1920	1921	1922	1923	1924	1920	1921	1922	1923	1924	1920	1921	1922	1923	1924
1.....	325,814,000	---	---	---	20	11	---	---	---	29	21	---	---	---	43	14
2.....	61,138,000	---	---	---	27	29	---	---	---	37	24	---	---	---	27	17
3.....	43,400,000	30	31	61	62	58	21	27	53	53	61	11	7	36	24	24
4.....	35,704,000	27	20	10	---	---	17	16	11	---	---	22	35	29	---	---
5.....	31,230,000	18	11	36	26	28	23	23	54	45	42	17	6	55	31	25
6.....	26,710,000	34	37	64	63	57	25	31	39	36	45	20	21	31	35	39
7.....	24,729,000	20	18	21	---	---	19	18	30	---	---	13	22	54	---	---
8.....	24,131,000	23	21	44	35	50	16	21	37	22	31	3	4	16	20	32
9.....	23,708,000	---	28	40	29	44	---	33	64	59	62	---	24	19	8	7
10.....	19,914,000	---	---	19	16	18	---	---	13	9	8	---	---	23	22	34
11.....	16,048,000	---	---	34	15	14	---	---	24	21	13	---	---	22	9	8
12.....	15,900,000	35	15	14	---	---	24	11	15	---	---	36	23	34	---	---
13.....	15,367,000	6	3	8	---	---	5	4	8	---	---	19	13	6	---	---
14.....	12,450,000	10	4	4	22	36	4	3	6	19	19	12	14	8	18	13
15.....	8,979,000	26	16	7	---	---	28	20	19	---	---	21	12	27	---	---
Total number of companies in cost arrays.....	-----	36	40	75	74	70	36	40	75	74	70	36	40	75	74	70

Source: Federal Trade Commission files.

COMMENTS ON TABLE 77

(a) Costs of the 15 companies absorbed by the Continental Baking Corporation were in general high. The United Bakeries Corporation (company No. 1), the largest company absorbed by the consolidation, did not show particularly low costs in 1923 and 1924.

TABLES CONTAINING RETURNS ON INVESTED CAPITAL AND RELATED DATA

The tables to follow show the returns on invested capital for companies in all the industries covered in the foregoing cost tables. Moreover, returns on invested capital for three other industries will also be given. These industries are the automobile, the chemical, and the rayon industries.

Following the table showing returns on invested capital earned by the principal automobile companies are costs and margins between prices and costs for certain well-known automobiles. These so-called costs are not strictly comparable with the costs shown in the foregoing tables. They are rather statistical averages arrived at by dividing the total number of Chevrolets, Plymouths, Fords, Oldsmobiles, and Studebakers of all sizes and types into the expenses involved in the production of these various types and styles. Comparison of the statistical averages for the various cars is made possible by the fact that the average prices realized on all these types and styles of cars are available for judgment as to the comparability of the cars represented in the statistical averages. For example, the average cost of producing all sizes and types of passenger Chevrolets can be compared with the average cost of producing all sizes and types of Plymouths, provided the average price realized by General Motors from all types of Chevrolets was about the same as the average price realized by Chrysler on all types and sizes of Plymouths. Where there is a small variation between the average price realized on the two cars, the margins between the average costs and the average prices give a basis for judgment as to the relative efficiencies involved in their production.

Because of the inability to obtain sufficient cost data for comparing the efficiencies of different chemical companies, and because of the varying proportions of the many different chemicals produced by these companies, returns on invested capital furnish the only basis for judging the relative efficiencies of the chemical companies.

The returns on invested capital earned by the rayon companies will be presented to show: (a) the enormous profits possible for a monopoly; (b) the relatively greater success of certain medium-sized and small companies, which appeared when the patent monopoly of the dominant company expired.

The number of companies covered in the tables for returns on invested capital is in general smaller than the number of companies covered in the cost tables. This is explained by the fact that the data on returns on invested capital are largely derived from sources which cover only the larger companies in an industry. The Securities and Exchange Commission, for example, publishes figures only for companies registered on securities exchanges, and such companies are in general the larger companies in an industry. In some of the Federal

Trade Commission's reports, financial data for only the larger companies are presented.

William Leonard Crum's study *Corporate Size and Earning Power* shows that small corporations, when successful, earn on the average higher rates of return than medium-sized and large companies.¹ For this reason, if the rates of return on invested capital for the numerous successful small corporations had been available, they would undoubtedly have shown that many such corporations make a more effective use of their capital than the larger corporations. Figures published by the Bureau of Internal Revenue in *Statistics of Income* prove that the capital turnover of small corporations is in general much higher than the capital turnover of large corporations.

TABLE 78.—*Rates of return on invested capital of 7 automobile companies for their motor-vehicle business, 1927-37*

Year	General Motors	Ford	Chrysler	Studebaker	Hudson	Packard	Nash
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1927	61.43	¹ 5.21	49.42	14.04	41.39	35.62	75.93
1928	58.89	¹ 12.47	38.73	16.21	35.69	65.61	65.57
1929	48.41	15.26	20.92	11.23	29.35	64.82	57.78
1930	27.62	5.81	.51	1.74	1.36	26.53	26.85
1931	25.35	¹ 6.71	4.94	2.62	¹ 6.66	¹ 5.14	21.42
1932	¹ 2.07	¹ 13.89	¹ 9.22	¹ 6.59	¹ 17.33	¹ 17.30	1.27
1933	16.93	¹ 2.16	20.28	¹ 1.10	¹ 17.27	1.09	¹ 19.05
1934	16.61	4.26	12.61	¹ 1.56	¹ 13.40	¹ 29.14	¹ 33.00
1935	33.76	2.20	44.55	¹ 5.68	3.50	7.54	¹ 15.65
1936	37.93	4.26	70.31	14.40	14.39	29.65	3.12
1937	25.85	.76	55.75	5.57	3.73	11.53	3.75
11-year average	32.32	¹ 8.80	27.27	6.13	9.40	21.25	36.90

¹ Loss.

Source: Federal Trade Commission.

COMMENTS ON TABLE 78

(a) Size classification of companies:

General Motors is the largest company in the industry, although much of its size is explained by its business in lines other than motor vehicles.

Ford actually had a larger investment in the motor-vehicle business than General Motors in 1937 as well as during the 11 years covered in the foregoing table. General Motors and Ford, for this reason, might be considered the large companies in the motor-vehicle industry.

Chrysler, with an investment about one-fourth as large as General Motors or Ford, is designated medium-sized.

Studebaker, Hudson, Packard, and Nash are small companies when compared with the three previously described.

(b) During the late twenties Nash earned higher rates of return on invested capital than General Motors, but of late years this company has not been so successful.

(c) During the thirties Chrysler has made the greatest progress shown by any automobile company. Despite its relatively small capital its passenger car production has surpassed that of Ford. Chrysler is but little integrated, and has relatively little capital tied up in the manufacture of parts and raw materials.

(d) Ford is the most integrated automobile company, and General Motors is the next most integrated automobile company.

¹ Harvard University Press, 1939.

(e) In 10 of the 11 years covered Chrysler has earned higher rates of return on invested capital than Ford. In a number of late years Chrysler has earned higher rates of return on invested capital than General Motors.

TABLE 79.—Average price realizations and average costs for Chevrolet and Plymouth passenger cars, together with relations between these prices and costs, expressed as percentages, 1929, 1932, 1934, 1935, 1936, and 1937

	Average price realizations on all types and models		Average cost of all types and models	
	Chevrolet	Plymouth	Chevrolet	Plymouth
1929.....	\$519.67	\$553.77	\$460.59	\$579.51
1932.....	452.55	485.80	449.22	520.76
1934.....	523.88	544.60	498.37	521.57
1935.....	521.07	533.10	484.97	487.25
1936.....	526.03	543.52	488.18	478.01
1937.....	556.10	573.19	527.37	523.92

PERCENTAGES DERIVED FROM ABOVE FIGURES BY CONSIDERING THE AVERAGE PRICE REALIZATION AND AVERAGE COST OF A CHEVROLET AS 100

	Price		Cost	
	Chevrolet	Plymouth	Chevrolet	Plymouth
1929.....	100.0	106.6	100.0	125.8
1932.....	100.0	107.3	100.0	115.9
1934.....	100.0	104.0	100.0	104.7
1935.....	100.0	102.3	100.0	100.5
1936.....	100.0	103.3	100.0	97.9
1937.....	100.0	103.1	100.0	99.3

Source: Federal Trade Commission.

COMMENTS ON TABLE 79

(a) The average costs shown are composite costs of all types and models of Chevrolets and Plymouths, and the average prices on all these types and models of Chevrolets and Plymouths indicate the comparability of the cars represented in the average costs.

(b) The price and cost relatives were derived by assuming that the average price and average cost of all types of passenger Chevrolets equal 100. The price and cost relatives for Plymouths were derived by dividing the average price realizations and the average costs of Chevrolets into the average price realizations and the average costs of Plymouths.

(c) In 1929 General Motors realized an average price on all types and sizes of passenger Chevrolets of \$519.67. In the same year Chrysler realized an average price on all types and sizes of Plymouths of \$553.77. These average prices indicate that the average Chevrolet and the average Plymouth in that year were reasonably comparable.

(d) In 1929 Chrysler realized 6.6 percent more on the average Plymouth than General Motors realized on the average Chevrolet, but Chrysler spent 25.8 percent more to produce its Plymouths. This indicates that Chevrolets were produced more effectively than Plymouths in 1929. Of late years the relation has been reversed. In 1936, for example, Chrysler realized 3.3 percent more on the average Plymouth than General Motors realized on the average Chevrolet, but Chrysler produced the average Plymouth at 2.1 percent less than General Motors produced the average Chevrolet.

TABLE 80.—Average price realizations and average costs for Chevrolet and Ford passenger and commercial vehicles, together with relations between these prices and costs, expressed as percentages—1929, 1932, 1934, 1935, 1936, and 1937

	Average price realizations on all types and models		Average cost of all types and models	
	Chevrolet	Ford	Chevrolet	Ford
1929.....	\$530.20	\$492.10	\$457.07	\$463.06
1932.....	465.36	484.42	446.11	624.01
1934.....	528.30	522.51	484.08	499.59
1935.....	524.54	524.58	475.90	522.69
1936.....	529.38	524.14	478.68	513.73
1937.....	562.72	528.35	521.87	533.78

PERCENTAGES DERIVED FROM ABOVE FIGURES BY CONSIDERING THE AVERAGE PRICE REALIZATION AND AVERAGE COST OF A CHEVROLET AS 100

	Price		Cost	
	Chevrolet	Ford	Chevrolet	Ford
1929.....	100.0	92.8	100.0	101.3
1932.....	100.0	104.1	100.0	139.9
1934.....	100.0	98.9	100.0	103.2
1935.....	100.0	100.0	100.0	109.8
1936.....	100.0	99.0	100.0	107.3
1937.....	100.0	93.9	100.0	102.3

Source: Federal Trade Commission.

COMMENTS ON TABLE 80

(a) According to the standard described in the foregoing table, Chevrolets were produced more effectively than Fords in every one of the years shown. For example, in 1937 Ford got 6.1 percent less for the average Ford than General Motors realized on the average Chevrolet, but the average Ford cost 2.3 percent more to produce than the average Chevrolet.

TABLE 81.—Average price realizations and average costs for Studebaker passenger and commercial vehicles and for Oldsmobile passenger cars, together with relations between these prices and costs, expressed as percentages—1932, 1934, 1935, 1936, and 1937

	Average price realizations on all types and models		Average cost of all types and models	
	Oldsmobile	Studebaker	Oldsmobile	Studebaker
1932.....	\$692.24	\$746.35	\$871.59	\$840.96
1934.....	684.27	720.03	688.22	753.69
1935.....	683.22	729.70	625.27	776.55
1936.....	673.31	735.99	629.62	704.82
1937.....	704.24	757.62	685.17	748.83

PERCENTAGES DERIVED FROM ABOVE FIGURES BY CONSIDERING THE AVERAGE PRICE REALIZATION AND AVERAGE COST OF AN OLDSMOBILE AS 100

	Price		Cost	
	Oldsmobile	Studebaker	Oldsmobile	Studebaker
1932.....	100.0	107.8	100.0	96.5
1934.....	100.0	105.2	100.0	109.5
1935.....	100.0	106.8	100.0	124.2
1936.....	100.0	109.3	100.0	111.9
1937.....	100.0	107.6	100.0	109.3

Source: Federal Trade Commission.

COMMENTS ON TABLE 81

(a) In 1934, 1935, 1936, and 1937 the average Oldsmobile was produced more effectively than the average Studebaker.

(b) In 1932 the average Studebaker was produced more effectively than the average Oldsmobile.

TABLE 8''—Average rates of return on stockholders' invested capital of 17 cement companies for the years 1917-36, arranged in order of descending rates of return ¹

Company	Size	Location	Average rate of return
			Percent
I.....	Very small.....	West.....	22.67
II.....	Medium.....	Country-wide.....	15.63
III.....	do.....	West.....	15.21
IV.....	Small.....	do.....	15.02
V.....	do.....	Middle West.....	14.98
VI.....	Large.....	Country-wide.....	13.23
VII.....	Very small.....	West.....	12.07
VIII.....	Small.....	Middle West.....	10.82
IX.....	Very small.....	East.....	9.02
X.....	Large.....	Country-wide.....	8.74
XI.....	Small.....	Middle West.....	7.80
XII.....	Medium.....	Middle West and East.....	7.79
XIII.....	Large.....	Country-wide.....	7.28
XIV.....	Medium.....	Middle West and East.....	7.22
XV.....	Very small.....	Middle West.....	6.81
XVI.....	do.....	East.....	5.88
XVII.....	Small.....	do.....	4.56

¹ Stockholders' investment consists of the average of the outstanding common and preferred stocks and surplus at beginning and end of year.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 82

(a) Size classification of companies (same as that employed in foregoing cement-cost tables):

Large companies.—Universal Atlas, Lehigh-Portland, and Lone Star.

Medium-sized companies.—Penn-Dixie, Alpha-Portland, and Ideal.

Small companies.—Those with annual production between 2,000,000 and 4,000,000 barrels.

Very small companies.—Those with annual production under 2,000,000 barrels.

Over the 20-year period (1917-36) certain small and medium-sized companies in the West and one medium-sized company with plants in the South and East earned higher rates of return on invested capital than the most profitable of the three large companies.

(b) One of the 3 large companies earned a relatively low rate of return on invested capital. Of the 17 companies covered in the table, 12 earned a higher rate of return on invested capital than this large company.

TABLE 83.—Average rates of return on stockholders' invested capital of 16 cement companies for the year 1935, arranged in order of descending rates of return

Company	Size	Location	Rate of return
			Percent
I.....	Medium.....	West.....	15.68
II.....	Very small.....	do.....	10.07
III.....	do.....	do.....	9.88
IV.....	Large.....	Country-wide.....	4.43
V.....	Small.....	Middle West.....	3.86
VI.....	Large.....	Country-wide.....	.67
VII.....	Small.....	Middle West.....	.42
VIII.....	do.....	do.....	.29
IX.....	Medium.....	Middle West and East.....	¹ 2.23
X.....	do.....	Country-wide.....	¹ 2.38
XI.....	do.....	Middle West and East.....	¹ 2.45
XII.....	Small.....	West.....	¹ 2.49
XIII.....	do.....	East.....	¹ 3.30
XIV.....	Large.....	Country-wide.....	¹ 4.12
XV.....	Very small.....	Middle West.....	¹ 5.41
XVI.....	do.....	East.....	¹ 6.14

¹ Loss.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 83

(a) Size classification of companies: Same as in the foregoing table.

(b) Three small and medium-sized companies in the West earned the highest rates of return on invested capital in 1935.

(c) The largest company made a low rate of return on invested capital in that year.

TABLE 84.—Average rates of return on stockholders' invested capital of 16 cement companies for the year 1936, arranged in order of descending rates of return

Company	Size	Location	Rate of return
			Percent
I.....	Medium.....	West.....	34.17
II.....	Very small.....	do.....	24.30
III.....	Large.....	Country-wide.....	18.92
IV.....	Small.....	Middle West.....	15.05
V.....	Very small.....	West.....	11.16
VI.....	Medium.....	Middle West and East.....	10.86
VII.....	Small.....	West.....	10.02
VIII.....	Large.....	Country-wide.....	9.99
IX.....	Medium.....	do.....	9.16
X.....	do.....	Middle West and East.....	8.03
XI.....	Small.....	Middle West.....	7.67
XII.....	Large.....	Country-wide.....	6.66
XIII.....	Small.....	Middle West.....	6.12
XIV.....	do.....	East.....	4.99
XV.....	Very small.....	do.....	1.54
XVI.....	do.....	Middle West.....	¹ 6.79

¹ Loss.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 84

(a) Size classification of companies: Same as in the foregoing table.

(b) The highest rates of return on invested capital were again earned by two western companies, neither of which was large.

(c) One of the three large companies earned a very high rate of return on invested capital in 1936.

TABLE 85.—Average annual total invested capitals and returns thereon for 11 steel companies 1917–38

Company	Average annual total investment	Average annual profit applicable to total invested capital	Average annual rate of return on invested capital
			<i>Percent</i>
United States Steel Corporation.....	\$1,760,820,526	\$129,020,924	7.33
Bethlehem Steel Corporation.....	528,805,568	23,947,750	4.53
Republic Steel Corporation.....	148,335,836	5,700,718	3.84
Jones & Laughlin Steel Corporation.....	182,959,802	11,039,140	6.03
Youngstown Sheet & Tube Co.....	165,650,756	10,688,035	6.45
National Steel Corporation ¹	144,350,340	11,789,262	8.17
Inland Steel Co.....	80,407,561	8,187,736	10.18
American Rolling Mill Co.....	61,995,249	4,045,371	6.53
Wheeling Steel Corporation.....	84,723,458	5,161,605	6.09
Otis Steel Co. ²	29,650,862	1,240,364	4.18
Pittsburgh Steel Co.....	39,298,408	1,933,327	4.92

¹ Annual average for period from 1930 to 1938, inclusive.² Annual average for period from 1919 to 1938, inclusive.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 85

(a) Over the 22-year period (1917–38) Inland Steel Co. earned a considerably higher rate of return on invested capital than the United States Steel Corporation, the Bethlehem Steel Corporation, or the Republic Steel Corporation, the three largest steel companies.

(b) The National Steel Corporation, another medium-sized steel company, also shows a higher rate of return on invested capital than the three largest companies, but the figures for the National Steel Corporation extend back only to 1930. It should be noted, however, that about one-half of the years represented in the National Steel Corporation's average were depression years.

TABLE 86.—Rates of return on total invested capital of 11 steel companies, 1930–38
[Percent]

Company	1930	1931	1932	1933	1934	1935	1936	1937	1938	Simple average 1930–38
United States Steel Corporation.....	6.16	0.95	13.52	1.75	10.81	0.63	4.56	8.64	0.22	1.68
Bethlehem Steel Corporation.....	4.71	1.10	2.03	1.41	1.21	1.97	3.72	6.92	1.97	2.13
Republic Steel Corporation.....	.24	2.21	3.90	1.53	1.08	3.75	6.35	5.65	1.95	.92
Jones & Laughlin Steel Corporation.....	5.06	1.84	17.59	2.24	1.34	.06	2.95	3.47	1.79	.24
Youngstown Sheet & Tube Co.....	5.19	1.22	4.07	1.93	.90	3.12	7.50	8.49	1.33	2.15
National Steel Corporation.....	9.85	5.78	2.83	3.85	6.66	10.33	11.38	15.44	5.98	9.11
Inland Steel Co.....	8.95	3.44	1.39	2.40	6.73	12.82	14.20	13.15	5.37	7.30
American Rolling Mill Co.....	2.37	1.81	.24	1.78	4.04	7.93	9.68	9.37	1.60	3.78
Wheeling Steel Corporation.....	4.05	1.61	2.80	.77	2.13	5.46	6.06	5.84	1.99	2.43
Otis Steel Co.....	4.61	2.44	6.77	2.79	4.92	11.24	10.95	10.44	1.60	3.17
Pittsburgh Steel Co.....	4.90	2.00	3.86	3.89	1.84	2.85	.50	5.18	.57	1.38

¹ Loss.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 86

(a) National and Inland earned higher rates of return on invested capital than the three largest steel companies in almost every year between 1930 and 1938.

(b) National and Inland are less integrated than the United States Steel Corporation in that they have less capital tied up in ore reserves and have a relatively smaller pig-iron production.

(c) National and Inland are compact companies located in the North Central States, near their raw materials and their markets.

TABLE 87.—*Rates of return on invested capital of long-line farm-machinery manufacturers, 1913-37*

Company	Average 1913-18	Average 1919-26	Average 1927-36	1935	1936	1937
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
International Harvester Co.-----	12.34	8.74	8.76	12.40	¹ 13.34	13.18
Deere & Co.-----	10.89	7.70	11.51	14.68	22.66	24.91
Allis-Chalmers.-----			5.05	6.06	11.01	13.88
J. I. Case Co.-----		7.43	5.40	7.02	9.35	² 14.68
Emerson-Brantingham Corporation-----	3.73	³ 1.83				
Oliver Farm-Equipment Co.-----			1.54	² 2.50	5.81	14.62
Minneapolis-Moline-----	6.65		³ 2.00	³ 1.14	5.12	³ 16.98
Massey-Harris Co.-----			³ 5.54	³ 11.56	³ 2.75	
B. F. Avery & Sons.-----	11.30	4.89	1.11	8.17	14.79	

¹ Based on net profits for 11 months.

² Based on net profits for 10 months.

³ Loss.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 87

(a) Size classification of companies:

Large companies.—International Harvester.

Medium-sized companies.—Deere, Allis-Chalmers, and J. I. Case.

Small companies.—Other companies covered in table 87.

(b) Before 1926 International Harvester Co. earned a higher rate of return on invested capital than the other farm-machinery companies.

(c) Between 1927 and 1936 Deere forged ahead and showed the highest rate of return on invested capital earned by any of the farm-machinery companies shown in the table.

(d) In 1937 all three of the medium-sized companies earned higher rates of return on invested capital than International Harvester.

(e) In 1937 even the smaller long-line companies earned higher rates of return on invested capital than International Harvester.

(f) International Harvester, which owns a steel company, is the most highly integrated farm-machinery company. Deere concentrates on the farm-machinery business, Allis-Chalmers, a newcomer in the industry, makes other types of machinery. Its success of late years has been due to developments in power-driven farm machinery.

TABLE 88.—*Eastern petroleum refiners, ranked according to simple average of rates of return on capital invested in petroleum business for years 1922, 1923, 1924, and 1925*¹

Company	Investment in 1922	Ranks according to average return on capital investment	Company	Investment in 1922	Ranks according to average return on capital investment
1.....	\$8,753,254	1	9.....	\$67,811,150	9
2.....	29,236,885	2	10.....	89,467,651	10
3.....	61,920,006	3	11.....	316,240,235	11
4.....	1,485,935	4	12.....	367,651	12
5.....	4,950,314	5	13.....	8,450,008	13
6.....	2,229,028	6	14.....	690,184	14
7.....	233,553,064	7	15.....	1,391,059	15
8.....	32,107,174	8	16.....	320,834	16

¹ Company with rank 1 had highest average rate of return on invested capital for years 1922, 1923, 1924, and 1925.

² Indicates company operated at a loss over the average for the 4-year period.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 88

(a) Rank, according to average rate of return on capital investment for each eastern petroleum refiner, was computed in the following manner:

A simple average of the 1922, 1923, 1924, and 1925 rates of return on invested capital earned by each refiner was computed.

The refiner with the highest simple average rate of return for the 4-year period was given rank 1. The refiner with the next highest simple average rate of return was given rank 2. Companies with ranks above 12 showed a loss for the 4-year period as a whole.

(b) Companies 7 and 11 were the two largest companies: Standard Oil Co. (New Jersey) and Standard Oil Co. of New York.

(c) Six of the small and medium-sized eastern refiners earned a higher rate of return over the 4-year period than the more profitable of the two largest companies. The largest company was only the twelfth most profitable of the 16 companies covered in the tables.

TABLE 89.—*California petroleum refiners, ranked according to simple average of rates of return on capital invested in petroleum business for years 1922, 1923, 1924, and 1925*¹

Company	Investment in 1922	Ranks according to average return on capital investment	Company	Investment in 1922	Ranks according to average return on capital investment
1.....	\$612,837	1	6.....	\$172,454	6
2.....	1,678,843	2	7.....	11,032,704	7
3.....	33,580,513	3	8.....	104,320,624	8
4.....	200,866,458	4	9.....	53,345,493	9
5.....	52,211,737	5			

¹ Company with rank 1 had highest average rate of return on invested capital for years 1922, 1923, 1924, and 1925.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 89

(a) Rank, according to average rate of return on capital investment for each California petroleum refiner, was computed in the following manner:

A simple average of the 1922, 1923, 1924, and 1925 rates of return on invested capital earned by each refiner was computed.

The refiner with the highest simple average rate of return for the 4-year period was given rank 1. The refiner with the next highest simple average rate of return was given rank 2.

(b) The Standard Oil Co. of California, the largest oil company on the Pacific coast, had the fourth highest rate of return over the 4-year period covered.

(c) The second largest company on the Pacific coast had next to the lowest rate of return on invested capital over the 4-year period.

TABLE 90.—*Midcontinent petroleum refiners, ranked according to simple average of rates of return on capital invested in petroleum business for years 1922, 1923, 1924, and 1925*¹

Company	Investment in 1922	Ranks according to average return on capital investment	Company	Investment in 1922	Ranks according to average return on capital investment
1.....	\$16,930,438	1	16.....	\$18,031,295	16
2.....	175,033,355	2	17.....	184,147,222	17
3.....	3,158,723	3	18.....	3,870,096	18
4.....	210,381	4	19.....	244,388,154	19
5.....	184,423	5	20.....	8,185,992	20
6.....	7,816,830	6	21.....	991,869	21
7.....	167,773,095	7	22.....	449,786	22
8.....	102,340,703	8	23.....	3,539,135	23
9.....	271,454,011	9	24.....	13,487,324	24
10.....	105,855,390	10	25.....	92,120,816	25
11.....	24,894,826	11	26.....	17,163,852	26
12.....	112,616,409	12	27.....	35,490,447	27
13.....	25,567,276	13	28.....	9,957,107	28
14.....	25,422,190	14	29.....	45,280,801	29
15.....	57,629,723	15	30.....	401,568	30

¹ Company with rank 1 had highest average rate of return on invested capital for years 1922, 1923, 1924, and 1925.

² Indicates company operated at a loss over the average for the 4-year period.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 90

(a) Rank, according to average rate of return on capital investment for each midcontinent petroleum refiner, was computed in the following manner:

A simple average of the 1922, 1923, 1924, and 1925 rates of return on invested capital earned by each refiner was computed.

The refiner with the highest simple average rate of return for the 4-year period was given rank 1. The refiner with the next highest simple average rate of return was given rank 2.

(b) There were many more small and medium-sized oil refiners in the midcontinent field than in the coastal areas.

(c) The largest company in the midcontinent field had ninth position in the series. That means that there were eight refiners with higher rates of return on invested capital than this largest company.

(d) The company with the next largest investment had the nineteenth highest rate of return.

TABLE 91.—*Rates of return on total invested capital shown by all refiners with producing facilities, 1934-37*

	Assets (4-year average)	Rate of return on total invested capital				
		1934	1935	1936	1937	Simple average
		Percent	Percent	Percent	Percent	Percent
Standard Oil Co. (New Jersey).....	\$1,934,823,000	5.97	7.34	10.32	13.30	9.23
Socony-Vacuum Oil Co., Inc.....	822,552,000	4.86	4.34	7.76	9.02	6.50
Standard Oil Co. (Indiana).....	699,928,000	3.31	5.25	8.22	9.56	6.59
Standard Oil Co. of California.....	582,771,000	3.73	3.64	4.56	8.24	5.04
The Texas Corporation.....	525,890,000	2.81	5.50	9.82	12.22	7.59
Empire Gas & Fuel Co.....	411,808,000	(1)	4.57	3.96	4.37	4.30
Shell Union Oil Corporation.....	364,955,000	1.00	3.26	7.89	7.65	4.95
Consolidated Oil Co.....	340,073,000	1.46	4.53	6.37	7.74	5.10
Tide Water Associated Oil Co.....	197,283,000	(1)	(1)	5.22	9.95	7.59
Phillips Petroleum Co.....	186,059,000	5.04	10.43	11.81	13.62	10.23
The Atlantic Refining Co.....	169,861,000	4.81	3.62	6.31	7.43	5.54
The Pure Oil Co.....	160,761,000	2.30	8.00	7.19	8.42	6.48
Union Oil Co. of California.....	155,271,000	3.05	4.48	4.91	9.01	5.37
The Ohio Oil Co.....	147,509,000	3.48	4.42	6.22	9.82	5.99
Sun Oil Co.....	114,221,000	8.92	8.84	9.66	10.76	9.55
Continental Oil Co.....	94,630,000	7.12	11.20	11.94	15.67	11.48
Mid-Continent Petroleum Corporation.....	61,925,000	1.65	5.03	8.95	10.16	6.45
Skelly Oil Co.....	49,265,000	4.14	8.91	13.24	15.17	10.37

1 No data.

2 For 3-year period.

3 For 2-year period.

Source: Securities and Exchange Commission.

COMMENTS ON TABLE 91

(a) Table 91 includes only the major oil companies.

(b) Some of the small companies in the industry undoubtedly earned higher rates of return on invested capital than the major oil companies covered in the table.

(c) The Standard Oil Co. (New Jersey) earned a fairly good rate of return on invested capital from 1934 through 1937, but four much smaller companies, though classified as major oil companies, earned a higher rate of return over the period.

TABLE 92.—*Returns on invested capital of beet sugar companies of different size, as shown by their assets, 1934-37*

	Assets (4-year average)	1934	1935	1936	1937	Simple average
		Percent	Percent	Percent	Percent	Percent
Great Western Sugar Co.....	\$61,460,000	12.11	11.66	15.99	14.40	13.54
American Crystal Sugar Co.....	25,159,000	7.13	5.55	10.61	7.13	7.61
Utah-Idaho Sugar Co.....	23,389,000	-----	8.58	7.88	4.16	6.87
Holly Sugar Corporation.....	21,744,000	17.43	27.52	24.22	9.70	19.72
Michigan Sugar Co.....	9,207,000	6.71	1.80	6.31	2.47	3.09
Union Sugar Co.....	4,009,000	2.09	4.89	10.26	4.71	4.44

1 3-year averages only, as 1934 figures not available.

2 Loss.

Source: Securities and Exchange Commission.

COMMENTS ON TABLE 92

(a) Size classification of companies:

Large.—Great Western Sugar Co.*Medium-sized*.—All other companies shown in table 92 except Union Sugar Co.*Small*.—Union Sugar Co.

(b) Unfortunately, rates of return of other medium-sized and small companies not available in the Securities and Exchange Commission's publication.

(c) The Holly Sugar Corporation, medium-sized as compared with the Great Western Sugar Co., earned higher rates of return than the largest company in 1934, 1935, and 1936.

(d) In 1937 Great Western Sugar Co. earned the highest rate of return shown in the table.

(e) Conditions in the sugar industry during the period covered were affected by drought and Government control.

TABLE 93.—Returns on invested capital of cane sugar refiners of different size, as shown by their assets; 1934-37

	Assets (4-year average)	1934	1935	1936	1937	Simple average
		Percent	Percent	Percent	Percent	Percent
American Sugar Refining Co.....	\$118,526,000	5.33	3.70	4.78	4.56	4.59
Godchaux Sugar Co.....	12,952,000	9.97	8.73	9.54	9.19	9.36
The South Coast Sugar Corporation.....	1,698,000			12.00	8.49	10.25

¹ 2-year averages only, as 1934 and 1935 figures not available.

Source: Securities and Exchange Commission.

COMMENTS ON TABLE 93

(a) Size classification of companies:

Large.—American Sugar Refining Co.

Small.—Godchaux Sugar Co. and the South Coast Sugar Corporation.

(b) The low rates of return earned by the American Sugar Refining Co., successor to the Sugar Trust, are explained by the high costs of that company as indicated in cost table previously presented.

(c) The high rates of return earned by the South Coast Sugar Corporation are explained by the fact that when this company was lately reorganized its capital was written down conservatively.

TABLE 94.—Rates of return earned on gross investment¹ for the different-sized canned-milk companies, 1914-18

Groups	1914		1915		1916		1917		1918	
	Number of companies	Percent of profit	Number of companies	Percent of profit	Number of companies	Percent of profit	Number of companies	Percent of profit	Number of companies	Percent of profit
Group A—Companies with sales of \$5,000,000 or over.....	3	11.5	3	11.4	3	18.1	6	19.4	8	8.9
Group B—Companies with sales of \$1,000,000 and less than \$5,000,000.....	3	29.1	4	23.8	6	30.6	7	30.6	11	12.0
Group C—Companies with sales of \$250,000 and less than \$1,000,000.....	8	11.3	7	2.2	8	16.8	8	17.3	21	4.5
Group D—Companies with sales of under \$250,000.....	(3)	(3)	2	² 5.4	2	8.2	5	15.8	11	2.7
Total and average.....	14	12.7	16	11.9	19	19.6	26	20.0	51	8.8

¹ "Securities" included in investment; "gross investment" identical with total investment.

² Loss.

³ Figures for no companies of this size available in 1914.

Source: Federal Trade Commission's Report on Milk and Milk Products, 1921, p. 44.

COMMENTS ON TABLE 94

(a) Canned milk industry affected by abnormal conditions during war period 1914-18. Conditions in 1914 were probably least abnormal.

(b) Three largest companies did not earn such high rates of return on invested capital as the three companies next in size in 1914.

(c) During entire war period, moreover, the three next largest companies earned higher rates of return than the three largest companies.

TABLE 95.—*Rates of return on invested capital in dairy business and butter production of 4 butter centralizers, 1929-35*

	Beatrice	Fairmont	American Dairies	North American Creameries
Butter production (pounds, 1934)	95, 108, 703	84, 808, 315	16, 819, 916	14, 116, 040

RATES OF RETURN ON TOTAL INVESTED CAPITAL IN DAIRY BUSINESS

	Percent	Percent	Percent	Percent
1929	13.30	9.95	10.40	12.73
1930	14.53	11.80	11.76	6.67
1931	14.32	5.81	5.43	10.31
1932	7.38	6.90	7.69	1.44
1933	1.62	8.82	5.90	1.63
1934	1.98	9.95	5.63	2.23
1935	6.17		10.41	

¹ Loss.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 95

(a) For the period 1929-35, as a whole, the Beatrice Creamery Co., the largest butter company represented in the table, earned the highest rates of return on invested capital.

(b) For the later years shown, however, two of the other companies showed higher rates of return on invested capital.

TABLE 96.—*Milling investment, net income, and rate of return, by investment groups, 1919-22*

	Investment	Net income	Rate of return	
			Percent	Rank
Under \$250,000	\$15, 060, 924	\$925, 263	6.1	5
\$250,000 to \$500,000	39, 666, 996	3, 333, 301	8.4	4
\$500,000 to \$1,000,000	63, 748, 604	6, 724, 092	10.5	2
\$1,000,000 to \$2,000,000	76, 098, 923	7, 596, 576	10.0	3
\$2,000,000 and over	488, 624, 357	53, 603, 674	11.0	1

Source: Federal Trade Commission.

COMMENTS ON TABLE 96

(a) The largest number of flour-milling companies covered for any year was 107.

(b) Companies are grouped according to size of investment.

(c) Over the 4-year period, the largest companies, those with milling investment of \$2,000,000 and over, showed the highest average rate of return on invested capital.

(d) Some of the companies in the group with milling investment of \$2,000,000 and over were probably only medium-sized.

TABLE 97.—*Production, milling investment, earnings, and rate of return by production groups, 1919-22*

	Production	Investment	Income	Rate of return
	<i>Barrels</i>			<i>Percent</i>
Under 125,000 barrels.....	12,089,925	\$47,903,154	\$2,438,743	5.1
125,000 to 250,000 barrels.....	15,813,578	56,069,154	4,200,079	7.5
250,000 to 500,000 barrels.....	30,126,679	95,493,214	11,255,640	11.8
500,000 to 1,000,000 barrels.....	24,204,461	89,701,734	9,069,414	10.1
1,000,000 barrels and over.....	115,295,798	394,032,548	45,218,656	11.5

Source: Federal Trade Commission.

COMMENTS ON TABLE 97

(a) The largest number of flour-milling companies covered for any year was 107. These companies are the same as those covered in table 96.

(b) Companies are grouped according to size of production.

(c) Over the 4-year period the medium-sized flour millers, those with annual production between 250,000 and 500,000 barrels, earned the highest rate of return on invested capital.

(d) The next highest average rate of return shown was earned by companies with annual production of 1,000,000 barrels and over. Some of these companies, however, were probably only medium-sized.

TABLE 98.—*Return on milling investment and rank according to rates of return of 11 flour milling companies in 1922*

Company	Size classification	Investment	Rank according to rate of return
1. Standard Milling group ¹	Large.....	\$21,877,695	9
2. Washburn-Crosby Co.....	do.....	21,330,764	2
3. Pillsbury Flour Mills Co.....	do.....	15,199,557	4
4.	Medium.....	12,651,568	11
5.	do.....	6,937,592	5
6.	do.....	5,808,228	7
7.	do.....	5,699,308	3
8.	do.....	4,080,416	10
9.	do.....	2,997,656	6
10.	do.....	2,785,783	8
11.	do.....	2,121,705	1

¹ Represents a total of the accounts of the Northwestern Consolidated Milling Co., Southwestern Milling Co., Inc., Hecker-Jones-Jewell Milling Co., and Duluth Superior Milling Co.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 98

(a) Size classification of companies:

Large.—Standard Milling Co., Washburn-Crosby Co., and Pillsbury Flour Mills Co.

Medium-sized.—Other companies with production in 1922 in excess of 500,000 barrels.

(b) The highest rate of return earned by any of the 11 companies was that shown by the smallest of the 11 companies.

- (c) The largest company had ninth highest rate of return.
 (d) Washburn-Crosby (now General Mills) earned the next highest rate of return.

TABLE 99.—Average rate of return on milling investment for 47 companies, grouped by quantity of flour production, 1919-24

Production group ¹	Average annual production	Average annual investment	Average annual net profits	Average rate of return
	<i>Barrels</i>			<i>Percent</i>
Under 125,000 barrels.....	1,260,300	\$5,040,198	\$329,498	6.5
125,000 to 250,000 barrels.....	1,909,966	6,737,816	371,846	5.5
250,000 to 500,000 barrels.....	3,199,352	7,674,886	1,119,546	14.6
500,000 to 1,000,000 barrels.....	3,093,002	10,549,729	712,937	6.8
Over 1,000,000 barrels.....	11,255,570	48,035,964	5,013,298	10.4
Average.....	20,718,190	78,038,593	7,547,125	9.7

¹ The group within which a company's production, investment, and net profit for a given year are placed is determined by its production for that year. For this reason the number of companies in a given group varies from year to year

Source: Federal Trade Commission.

COMMENTS ON TABLE 99

(a) Table 99 covers 47 companies over the 6-year period 1919 through 1924.

(b) Companies are grouped according to size of production.

(c) Highest average rate of return was earned by group containing medium-sized or fairly small companies.

TABLE 100.—Average rate of return on milling investment for 47 companies, grouped by size of investment, 1919-24 (crop and calendar years combined)

Investment group ¹	Average annual investment of group	Average annual net profit of group	Rate of return
			<i>Percent</i>
Under \$250,000.....	\$1,684,594	\$177,864	10.6
\$250,000 to \$500,000.....	5,085,286	430,878	8.5
\$500,000 to \$1,000,000.....	7,209,480	756,096	10.5
\$1,000,000 to \$2,000,000.....	7,143,803	718,362	10.1
Over \$2,000,000.....	56,915,430	5,463,925	9.6
All companies.....	78,038,593	7,547,125	9.7

¹ The group within which a company's investment and net profit are placed for a given year is determined by its investment for that year. For this reason the number of companies in a given group varies from year to year.

Source: Federal Trade Commission.

COMMENTS ON TABLE 100

(a) Table 100 covers 47 companies over the 6-year period 1919 through 1924.

(b) Companies are grouped according to size of investment.

(c) Highest average rate of return was earned by group containing medium-sized or fairly small companies.

TABLE 101.—Rate of return on milling investment for 47 companies, grouped by size of investment, by years, 1919-24 (crop and calendar years combined)

Investment group	1919		1920		1921		1922		1923		1924		1919-24	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Under \$250,000.....	11	24.6	5	4.3	---	2.8	11	10.2	8	4.2	9	8.5	5-11	10.6
\$250,000 to \$500,000.....	12	13.5	16	11.1	16	¹ 1.2	13	15.2	14	9.8	14	5.3	12-16	8.5
\$500,000 to \$1,000,000.....	9	19.7	8	17.9	7	¹ 4.5	10	12.5	13	6.8	12	10.1	7-13	10.5
\$1,000,000 to \$2,000,000.....	6	11.9	9	17.6	6	1.7	5	7.0	3	6.0	2	3.4	2-9	10.1
\$2,000,000 and over.....	9	13.0	9	16.0	9	4.3	8	8.3	9	8.0	10	6.6	8-10	9.6
Average.....	47	13.9	47	15.9	47	2.9	47	9.1	47	7.8	47	6.9	47	9.7

¹ Loss.

Source: Federal Trade Commission.

COMMENTS ON TABLE 101

(a) Table 101 is based on the same data used for table 100. In table 101 however, the figures for each year are shown separately.

(b) In every year except 1921 the highest rates of return were earned by small or medium-sized companies.

TABLE 102.—Rate of return on milling investment for 47 companies grouped by quantity of production, by years, 1919-24 (crop and calendar years combined)

Production group	1919		1920		1921		1922		1923		1924		1919-24	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Under 125,000 barrels.....	16	15.4	18	7.8	19	¹ 3.2	19	9.3	17	4.3	15	7.0	15-19	6.5
125,000 to 250,000 barrels.....	12	14.0	9	9.1	12	¹ 3.4	8	8.0	9	4.7	11	3.0	8-12	5.5
250,000 to 500,000 barrels.....	10	18.0	9	21.1	7	5.4	10	12.9	10	12.8	9	11.6	7-10	14.6
500,000 to 1,000,000 barrels.....	4	11.0	4	18.3	3	¹ 7.6	4	8.4	4	3.3	5	7.7	3-5	6.8
Over 1,000,000 barrels.....	5	13.7	7	16.2	6	7.8	6	8.6	7	8.5	7	6.7	5-7	10.4
Average.....	47	13.9	47	15.9	47	2.9	47	9.1	47	7.8	47	6.9	47	9.7

¹ Loss.

Source: Federal Trade Commission.

COMMENTS ON TABLE 102

(a) Table 102 is based on the same data used for table 99. In table 102, however, the figures for each year are shown separately.

(b) In every year except 1921 the highest rates of return were earned by small or medium-sized companies.

TABLE 103.—*Returns on invested capital in 1924 of 70 wholesale baking companies as compared with returns of the 3 largest companies and those of certain smaller companies absorbed by Continental Baking Corporation at the end of the year*

	Number of plants	Sales	Baking investment	Return on baking investment	
				As stated	As revised
				Percent	Percent
Total for 70 companies.....	223	\$162, 404, 244	\$152, 222, 222	15. 32	26. 42
3 largest companies:					
General Baking Corporation.....	31	31, 833, 651	20, 580, 777	29. 33	54. 62
Ward Baking Corporation.....	18	22, 778, 787	33, 709, 806	15. 01	24. 78
United Bakeries Corporation.....	39	24, 118, 441	34, 050, 266	12. 19	28. 74
10 companies absorbed by Continental Corporation:					
United Bakeries Corporation.....	39	24, 118, 441	34, 050, 266	12. 19	28. 74
9 other companies.....	36	22, 065, 087	18, 406, 917	11. 10	19. 14
Total for 10 companies ¹	75	46, 183, 528	52, 457, 183	12. 02	24. 53

¹ Continental absorbed about 20 other plants for which no figures are available.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 103

(a) Table 103 gives an analysis of the rates of return on investment earned by baking companies during 1924, the year preceding the creation of the Continental Baking Corporation.

(b) In 1924 the baking industry as a whole earned a very high rate of return on its invested capital.

(c) Of the 3 largest baking companies only 1, General Baking Corporation, earned in 1924 a substantially higher rate of return on invested capital than the average shown for the 70 companies covered by the Federal Trade Commission's inquiry.

(d) The largest company absorbed by the Continental Baking Corporation at the end of 1924 was the United Bakeries Corporation. This company earned a rate of return on invested capital equal to about the average earned by the 70 companies.

(e) Nine smaller baking companies, also absorbed by Continental, earned a lower than average rate of return on invested capital in 1924.

TABLE 104.—*Rank according to return on baking investment of 51 baking companies in 1925*

	Number of plants	Sales	Company's rank based on rate of return	
			Stated investment	Revised investment
1. Continental.....	95	\$60, 732, 756	² 19	² 17
2. General.....	33	35, 197, 826	6	2
3. Ward.....	16	23, 761, 171	18	14
4. Purity.....	25	14, 797, 640	27	20
5. (1).....	4	7, 809, 328	5	5
6. (1).....	11	6, 945, 186	34	26
7. (1).....	7	6, 377, 710	24	16
8. (1).....	3	2, 836, 641	43	40

¹ Name of company cannot be disclosed.

² This indicates that there are 18 companies with higher return on stated investment and 16 companies with higher return on investment, as revised by the Federal Trade Commission.

TABLE 104.—Rank according to return on baking investment of 51 baking companies in 1925—Continued

	Num- ber of plants	Sales	Company's rank based on rate of return	
			Stated invest- ment	Revised invest- ment
9. (1)	1	\$2,125,588	12	9
10. (1)	1	1,596,194	37	37
11. (1)	1	1,593,703	1	1
12. (1)	2	1,427,910	39	39
13. (1)	1	1,151,718	29	28
14. (1)	5	1,032,260	30	27
15. (1)	1	993,428	38	38
16. (1)	1	990,736	7	8
17. (1)	1	870,850	8	10
18. (1)	1	856,098	11	18
19. (1)	1	843,952	35	36
20. (1)	3	808,329	20	25
21. (1)	1	806,603	16	22
22. (1)	7	806,198	36	34
23. (1)	1	768,525	23	13
24. (1)	1	750,575	10	7
25. (1)	2	729,732	9	15
26. (1)	1	637,761	47	47
27. (1)	1	602,588	32	33
28. (1)	1	571,108	26	31
29. (1)	1	515,405	14	19
30. (1)	1	465,127	45	44
31. (1)	1	436,846	46	46
32. (1)	1	432,716	15	21
33. (1)	1	393,566	48	49
34. (1)	1	369,347	40	41
35. (1)	1	365,225	21	24
36. (1)	1	336,435	2	3
37. (1)	1	334,579	22	29
38. (1)	1	309,251	25	30
39. (1)	1	282,127	50	50
40. (1)	1	240,778	42	43
41. (1)	1	236,692	51	51
42. (1)	1	234,744	28	11
43. (1)	1	225,055	41	42
44. (1)	1	215,216	31	32
45. (1)	1	210,117	3	4
46. (1)	1	141,476	33	35
47. (1)	1	82,250	13	12
48. (1)	1	77,909	4	6
49. (1)	1	76,861	44	45
50. (1)	1	45,629	49	48
51. (1)	1	16,000	17	23

Source: Federal Trade Commission files.

COMMENTS ON TABLE 104

(a) Table 104 gives an analysis of rates of return on invested capital in 1925, the year in which the Continental Baking Corporation became the largest company in the industry.

(b) After the organization of the Continental Baking Corporation, General, Ward, and Purity were by comparison only medium-sized companies.

(c) In 1925 there were about 18 of the 51 companies that earned a higher rate of return on invested capital than the largest company.

(d) In that year General Baking Corporation showed the next to highest rate of return on invested capital, as revised by the Federal Trade Commission.

TABLE 105.—*Rates of return on business investment of four largest baking companies, 1927-37*¹

	Continental	Ward	Purity	General
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1927.....	10.77	12.06	22.02	30.27
1928.....	11.23	9.03	23.20	26.53
1929.....	13.49	8.78	20.11	24.55
1930.....	11.37	5.96	14.81	17.13
1931.....	8.89	5.99	7.49	16.06
1932.....	5.98	2.54	3.34	15.55
1933.....	6.18	1.80	4.85	10.36
1934.....	4.86	2.53	2.99	10.34
1935.....	4.55	3.89	1.60	11.04
1936.....	8.42	6.86	5.53	14.71
1937.....	10.14	4.50	4.14	8.95
Average 1927-37.....	8.86	6.03	9.48	17.61

¹ Business investment equals net worth plus long-term debt less outside investments, appreciation, and unamortized debt discount. Figures for any year obtained by averaging investment at beginning and end of year.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 105

(a) Table 105 shows the rates of return earned on invested capital by the four largest baking consolidations during late years.

(b) In every year except 1937 General had a higher rate of return on invested capital than Continental.

(c) Although strictly comparable figures for 1938 and 1939 were not available, it appears that General reassumed its position as the most profitable of the four larger baking companies after 1937.

TABLE 106.—*Returns on invested capital for the period from 1934 through 1937 for nine general chemical companies*

Company	1934	1935	1936	1937	Simple average
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
E. I. du Pont de Nemours & Co. ¹	10.64	12.97	15.50	14.36	13.37
Union Carbide & Carbon Corporation.....	10.22	12.78	17.18	19.75	14.98
Allied Chemical & Dye Corporation.....	11.41	13.61	19.74	18.04	15.70
Air Reduction Co., Inc.....	14.83	17.82	23.61	25.06	20.33
Monsanto Chemical Co.....	17.12	18.75	18.14	16.48	17.62
The Dow Chemical Co.....	16.66	19.60	16.74	13.79	16.70
The Mathieson Alkali Works, Inc.....	5.65	6.60	8.37	8.44	7.27
Pennsylvania Salt Manufacturing Co.....	7.55	10.86	14.24	8.07	10.18
Westvaco Chlorine Products Corporation.....	11.31	9.75	8.76	8.52	9.59

¹ Investment in General Motors and return thereon excluded.

Source: Securities and Exchange Commission.

COMMENTS ON TABLE 106

(a) Some idea of the relative size of the chemical companies shown is given by their average yearly assets for the period from 1934 through 1937.

Du Pont.....	\$615, 000, 000
Union Carbide.....	277, 000, 000
Allied Chemical.....	239, 000, 000
Air Reduction.....	40, 000, 000
Monsanto.....	32, 000, 000
Dow.....	32, 000, 000
Mathieson Alkali.....	26, 000, 000
Pennsylvania Salt.....	16, 000, 000
Westvaco.....	10, 000, 000

(b) Over the 4-year period covered the best rates of return on invested capital were shown by some of the smaller chemical companies covered in the foregoing table.

(c) In every one of the four years between 1934 and 1937 Air Reduction shows a higher rate of return on invested capital than Union Carbide.

TABLE 107.—Returns on invested capital for the period from 1934 through 1937 for 5 fertilizer companies

Company	1934	1935	1936	1937	Simple average
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
International Agricultural Corporation.....	2.17	1.17	4.27	3.93	2.89
Virginia-Carolina Chemical Corporation.....	4.40	.43	6.21	2.31	3.34
The American Agricultural Co. (of Delaware).....	8.43	6.30	12.30	8.73	8.94
Tennessee Corporation.....	2.28	2.07	2.80	6.25	3.35
The Davison Chemical Corporation.....			7.00	1.34	4.17

Source: Securities and Exchange Commission.

COMMENTS ON TABLE 107

(a) Some idea of the relative size of the fertilizer companies shown is given by their average yearly assets for the period from 1934 through 1937.

International Agricultural.....	\$28, 000, 000
Virginia-Carolina Chemical.....	27, 000, 000
American Agricultural.....	21, 000, 000
Tennessee Corporation.....	21, 000, 000
Davison Chemical.....	12, 000, 000

(b) The highest rate of return earned by any of these companies over the 4-year period was that shown for the American Agricultural Co. (of Delaware), which was the company third in size.

TABLE 108.—*Annual rate of return on total investment for principal rayon companies, 1915-38*

Year	American Viscose Corporation	Rayon department of E. I. du Pont de Nemours & Co.	Celanese Corporation of America	Industrial Rayon Corporation	The American Enka Corporation	North American Rayon Corporation	Tubize-Chatillon Corporation	American Bernberg Corporation	Average for group
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1915.....	26.32								26.32
1916.....	109.19								109.19
1917.....	95.96								95.96
1918.....	69.49								69.49
1919.....	97.02								97.02
1920.....	64.21								64.21
1921.....	44.62	¹ 2.13							41.99
1922.....	51.16	34.11							50.12
1923.....	43.47	38.91							43.15
1924.....	26.63	27.88							26.73
1925.....	32.29	34.19	1.15						30.60
1926.....	21.75	15.23	12.60	12.80					20.14
1927.....	26.19	27.01	20.76	25.48					25.76
1928.....	28.79	26.63	9.09	22.03				8.34	24.49
1929.....	23.43	19.04	9.88	12.42		¹ 0.96		¹ .04	18.05
1930.....	8.07	¹ .90	5.98	13.38	¹ 4.28	1.30		¹ 7.25	4.96
1931.....	4.44	4.45	3.03	6.43	1.55	¹ .32		¹ 9.72	3.35
1932.....	2.35	1.21	3.47	2.10	1.29	¹ 3.50		¹ 10.43	1.47
1933.....	10.55	12.65	20.37	14.35	8.86	12.58	4.73	¹ 14.64	12.16
1934.....	6.97	8.58	10.91	9.33	1.84	5.88	¹ .27	¹ 9.90	6.88
1935.....	6.53	5.27	12.13	4.25	5.03	10.06	5.86	¹ 11.10	6.74
1936.....	9.67	11.00	11.98	9.66	17.12	21.75	12.27	¹ 17.27	11.47
1937.....	10.16	13.10	10.96	1.68	21.19	24.75	16.60	29.45	12.14
1938.....	¹ 1.66	4.15	6.00	1.67	8.46	4.48	3.55	18.44	2.52
Average..	21.27	11.52	9.75	8.37	6.31	7.33	6.82	3.15	13.99

¹ Denotes loss.

Source: Federal Trade Commission files.

COMMENTS ON TABLE 108

(a) Until the early twenties the American Viscose Corporation had a monopoly in the rayon business. During the war period and immediately thereafter its returns on invested capital were enormous.

(b) In 1938 the American Viscose Corporation had 30 percent of the total business of the country; the rayon department of Du Pont had 22 percent of the total rayon business; and the Celanese Corporation of America had 15 percent of the total rayon business.

(c) After competition developed in the industry, the profits of the American Viscose Corporation were much reduced.

(d) Of late years Du Pont, the Celanese Corporation, and even some of the smaller rayon companies have earned higher rates of return on invested capital than the American Viscose Corporation.

HIGH DEGREES OF INTEGRATION VERSUS A LESS DEGREE OF INTEGRATION

The results of the Commission's tests of business efficiency also serve to throw light on the problem of greater integration versus less integration in industry. It was discovered that a number of industries characterized by relatively lesser degrees of integration made a better efficiency showing than their more highly integrated competitors. Less integrated companies had a better record of efficiency in the farm machinery industry, the automobile industry, and the steel industry than larger and more highly integrated companies.

Data for some of the other industries covered, although not so complete, could have been used as corroborative evidence on this point.

Testing business efficiency in the three industries mentioned, however, offered special problems either because the products of different manufacturers were not completely standardized, or because different manufacturers produced varying proportions of the different products. In appraising the efficiency of farm machinery and automobile manufacturers, recourse was had to margin comparisons¹ as well as to the rates of return on invested capital earned by the companies on all their varied products. Where the steel industry was concerned, entire reliance had to be placed on the rates of return earned from all the various iron and steel products by each company.

In the farm-machinery industry, International Harvester is by far the largest company. Deere, although second in size, is considerably smaller. International Harvester owns its own steel plant and is a much more integrated corporation than Deere. Yet in the manufacture of certain basic farm machinery selling at approximately the same price as farm machinery produced by the International Harvester Co., the Deere Co. had considerably lower costs. Further proof of Deere's greater efficiency lies in its higher rates of return on invested capital since 1927.

¹ A "margin comparison" is used here to mean a comparison of the unit margins, or unit profits, of two or more manufacturers. It is a method for testing business efficiency when the products of different manufacturers are substantially, but not exactly, identical in form or quality. For such homogeneous products as crude oil, cement, pig iron, or refined sugar, efficiency can be tested through comparisons of unit costs. But in the automobile or farm-machinery industries, the product of one manufacturer is never exactly identical with the product of another manufacturer. Nevertheless, the product of one manufacturer can be compared with the product of another manufacturer in these industries, provided the products compared are substantially similar and sell at approximately the same prices in the same markets. If the price of an International Harvester tractor varies but little from that of a Deere tractor, or if General Motors' Chevrolet sells at about the same price as Chrysler's Plymouth, the relative efficiency of the manufacturers of these products should be measured by making a comparison of unit profits, rather than of unit costs. However, unit costs may be compared even where two products are not completely identical, either with respect to quality or to price, if the product selling at the higher price is produced at a lower unit cost than the product selling at the lower price. But where a product sells at a higher price than the other comparable products and has a higher unit cost than the other products, a comparison of unit costs is open to the criticism that the higher-cost product is superior in quality, and that its high cost is entirely explained by that superiority.

Under these circumstances, a comparison of unit profits affords the only basis for measuring the relative efficiencies of the manufacturers of the products compared. If the manufacturer of the product selling at the lowest price realizes the largest unit profit, he is considered the most efficient manufacturer not because he has the lowest unit cost but because he shows the highest unit profit. Conversely, if the manufacturer of the product selling at the highest price has the greatest unit profit, he is considered the most efficient manufacturer because of that high unit profit; irrespective of what his cost may be.

In the automobile industry, General Motors is the largest company, chiefly because of its business in lines other than motor vehicles. Ford's direct investment in the automobile industry is probably even greater than that of General Motors. Ford is the most integrated of all the automobile manufacturers, and General Motors is the next most integrated company in the industry. Chrysler, which is considerably smaller and far less integrated than either of the two larger companies, has made better profit margins on its Plymouths than Ford or General Motors have made on their comparable automobiles (Fords and Chevrolets) during most of the years since the depression. Chrysler, furthermore, had a higher rate of return on its invested capital than Ford or General Motors.

Practically all the important steel companies are integrated. The United States Steel Corporation is more integrated than the "intermediate" steel companies, because it has iron ore reserves for a more distant future and because it produces a large part of the pig iron which it uses in its manufacture of steel. Yet, such medium-sized steel companies as National and Inland have consistently earned higher rates of return on their invested capital than the largest and most integrated company in the steel industry during the last decade and a half.

CASE STUDIES OF THREE MERGERS

THE MERGER CREATING THE LARGEST WHOLESALE BAKING CORPORATION IN THE UNITED STATES

This corporation was organized under the laws of Maryland November 6, 1924, as a holding and operating company. It acquired all or the controlling interest in the stock of a number of wholesale baking companies. Twenty companies were absorbed by the consolidation at the end of 1924 or during 1925. The consolidation by 1925 had brought together 95 plants and had an annual production of bread amounting to 34 percent of the total production reported by all wholesale baking companies covered by the Federal Trade Commission's report, entitled "Competition and Profits in Bread and Flour."

The Federal Trade Commission procured data on costs of production for 15 of the companies acquired by the consolidation in 1924 and 1925. The period for which these costs were obtained covered the 5-year period from 1920 through 1924, but costs for all 15 companies were not available for all of the 5 years. Only 5 companies reported for all 5 years.

The predecessor companies absorbed by the consolidation for which costs were procured operated 75 plants in 1924 and accounted for approximately 29 percent of the total bread production reported for all companies in that year. Only 10 of the companies absorbed by this consolidation reported in 1924, since 5 of the companies previously reporting had been absorbed by 2 other baking corporations, both of which were taken into the consolidation.

The efficiency of the predecessor bakery companies absorbed by the consolidation can be judged by three standards:

- (1) Total cost per pound of bread,
- (2) Total cost, excluding ingredients, per pound of bread;
- (3) Profits per pound of bread.

The 5 companies for which costs were obtained maintained a fairly constant production throughout the 5 years.

Total cost per pound of bread comes to mind as the first method of measuring the relative efficiencies of different bread-baking companies. But since the use of different ingredients may result in different kinds of bread, all of which might not be strictly comparable in quality, cost per pound minus ingredients suggests itself as a second criterion of efficiency.

Profit per pound was used as a third standard for measuring efficiency. Some companies may make a high-grade bread, or special kind of bread, at increased cost but with a better price realization and a larger profit margin. Where breads of different quality are compared, profits per pound may represent the best basis for efficiency appraisal. If the profit per pound is greater for a company making a higher quality of bread at a higher cost than for a company making a

lower quality of bread at lower cost, profit per pound rather than cost per pound becomes the best criterion of efficiency.

A comparison of unit costs and unit profits of the 15 companies which were absorbed by the consolidation with the unit costs and unit profits of other companies in the baking industry furnished the basis for appraising the relative efficiencies of these companies. Judged by the first two standards—cost including ingredients and cost excluding ingredients—the 15 predecessor companies absorbed by the consolidation were but in few instances relatively efficient, when compared with all other baking companies. Of the 5 companies for which figures are available for all years, 2 generally showed relatively high unit costs, 1 showed a higher than average cost, and 2 showed average costs. In each of the 5 years, the weighted average cost of these 5 companies was higher than the weighted average cost of all reporting companies.

The 15 companies, as a whole, made a better showing in the series constructed from unit profits per pound. Only a few companies, however, showed relatively high, or higher than average, unit profits in any one year. While several companies did show average unit profits in some years, particularly in 1923 and 1924, the weighted average unit profit for the entire group of 15 companies in 1924 was lower than the weighted average unit profit of all reporting companies.

The rates of return on invested capital earned in 1924 by 12 of the companies acquired by the consolidation were also available. In 1924 the rates of return earned on invested capital by almost all baking companies were abnormally high. Although the 12 predecessor companies earned good rates of return, they were not so high as the weighted average rate or return earned by all reporting companies. Thus, these 12 predecessor companies were below the average in efficiency, when this criterion is used.

It may be concluded therefore that the consolidation was a combination of companies which had relatively large production and capitalization but higher than average cost and less than average rate of return on invested capital when compared with other companies in the industry. In short, the companies absorbed by the consolidation were not chosen because of their efficiency. Size, for size sake, appears to have been the primary motive behind the consolidation.

The record of the consolidation in 1925 and thereafter suggests that those responsible for the merger were not primarily interested in creating increased efficiency. In 1925 the consolidation became the largest wholesale baking company in the United States. Its unit cost was very slightly lower than the average unit cost of all companies reporting in 1925. Its unit profit was not quite so high as the average unit profit shown for all reporting companies. Thus, both its unit cost was actually above, and its unit profit actually below, the average for the industry. Out of the 51 companies reporting in 1925, there were 18 with higher rates of return on baking investment, as such investment was stated by the companies. Sixteen companies had higher rates of return on baking investment, as such investment was revised by the Federal Trade Commission.

A comparison of the rates of return earned on invested capital during the thirties by the consolidation with those earned by another baking corporation large in size but considerably smaller than the consolidation, shows that this huge company had in most years a lower earning power than the smaller company.

AN IMPORTANT CEMENT MERGER

This corporation was organized on September 16, 1926, to acquire the assets and liabilities of four independent cement companies. One of the four predecessor companies was a single-plant company; the other three operated two plants each.

Officials of the corporation frankly stated to agents of the Federal Trade Commission that the 1926 consolidation was conceived and promoted by a banking syndicate. The syndicate approached the controlling stockholders of the four predecessor companies and made them attractive offers for their properties.

The bankers received about \$5,400,000 minus the costs of distributing the securities. When this remuneration is compared with the predecessor companies' net worth of about \$16,000,000, the burden of the underwriting of the new company and its stockholders becomes apparent. The public appears to have invested approximately \$32,000,000 in the four companies making up the consolidation, the books of which companies showed a net worth of about \$16,000,000. At the time of the consolidation, the common stock of the new corporation sold for \$43. It dropped in value to 50 cents a share in 1932. On May 23, 1940, it had a market value of about \$2 a share. From the point of view of the banking syndicate and the stockholders of the predecessor companies who sold out, the consolidation was obviously a great success. From the point of view of those who invested in the stock of the consolidation, the same cannot be said.

Although the promoters stated in a prospectus that economies resulting from the consolidation would benefit the earnings of the new company, it is apparent that they were primarily interested in the profits they themselves realized from the promotion. Some indication of the lack of interest shown by officials of the new company in increasing its efficiency is their reported failure to acquire the detailed operating records of the predecessor companies. Officials of a company intent on increasing the efficiency of its plants are careful to make year-by-year comparisons of the items of plant cost. Through such comparisons, cost reduction and increased efficiency may be most readily effected.

The progress of the four predecessor companies that were combined to form the consolidation had been exceptional. During the early twenties, the capacity and production of the cement industry in the United States were enormously expanded. Between 1921 and 1925, total United States production increased by about 67 percent. The four predecessor companies showed an even greater increase in production of 80 percent. With this increase in production, costs per barrel were substantially reduced. In 1921, the four predecessor companies had an average cost per barrel (exclusive of interest on capital) of \$1,717; in 1925, these same companies had an average cost per barrel of \$1.24. Expansion in the cement industry as a whole continued through the period of the consolidation and reached its peak in 1928. During the period of great expansion in the industry, between 1921 and 1928, the price of cement, as well as cost of cement, declined substantially.

Although the four predecessor companies had expanded their production and sales more rapidly than the cement industry as a whole, the progress of the consolidation did not keep pace with that shown by the industry after 1926. Indeed, in 1927, the year following the

consolidation, the production and sales of the consolidation fell off, whereas those for the cement industry as a whole continued to advance. And in 1928, the consolidation made an even poorer showing as compared with all other cement companies. Proof of the failure of the consolidation to maintain the position in the industry held by the four predecessor companies is given by the following figures. In 1926, the year of the consolidation, the four plants produced 5.9 percent of the total United States production. In 1927, the year after the merger, this percentage dropped to 5.2. In 1928, it fell to 4.8 percent. During the depression year 1932 it fell as low as 3.5 percent. In 1937, the company's proportion of the total production was 3.4 percent.

Officials of the company admit that the combination lost some of the business that the four aggressive competing predecessors had had. As a result, the consolidation increased its sales efforts and spent more money for the marketing of its product. Thus, if the accounts of the consolidated company for 1928 are compared with those of the four predecessor companies for 1925, it appears that the consolidation spent 9 percent more for selling and administrative expenses to market only 2 percent more cement.

After 1929, and all during the depression, wages in cement plants were drastically reduced. The consolidation reduced its plant pay roll between 1929 and 1930 from \$1,900,000 to less than \$1,000,000, and the average worker found his wage cut almost in half. Between 1927 and 1933, this company had reduced its number of plant workers from about 1,700 to about 700, and the average worker in 1933 received less than one-fourth of the wage he had earned in 1927.

It may be supposed that although the consolidation cut wages drastically and lost money during the depression, it did no worse than other cement companies. The only available method for measuring the record of this company against those of other cement companies is through a comparison of the rates of return on invested capital. The rates of return on invested capital earned by the consolidation can be compared with the average rate of return earned by 17 of the most important cement companies, including the consolidation.¹⁷

The figures of the 17 companies were obtained by the Federal Trade Commission from the files of Government agencies. As it was impossible to obtain the rates of return earned on the total capital of the cement companies from these Government files, a comparison of rates of return on stockholders' invested capital was resorted to.

Since temporary or unusual conditions may affect the earnings of a company in one year, it was considered advisable to make a comparison for a series of years. Average rates of return for a series of years are significant if all of the years occur in the same phase of the business cycle. For this reason, a comparison of the rates of return of the consolidation and the 17 companies for four separate periods will be presented.

The first period covers the 5 years before the consolidation—1921, 1922, 1923, 1924, 1925—when the cement industry was expanding rapidly.

The second period covered the three years following the consolidation of 1926. The years 1927, 1928, and 1929 were fairly good years

¹⁷ For most years, there were 17 companies, including the Pennsylvania-Dixie Cement Corporation. The rates of return of all the large and medium-sized companies and some small companies are included in the average.

in the cement industry, although the overcapacity created during the early years of the decade began to be felt even before the crash of 1929.

The third period covers the 4 years of depression: 1930, 1931, 1932, and 1933. During this period the accounts of the cement industry were written in red.

The fourth period covers the 3 years of revival after 1933. Industry revived slowly, and only the most efficient companies were able to show a normal profit.

Simple averages of the yearly rates of return on stockholders' invested capital in cement companies

Years	Rate of return on stockholders' investment for—	
	17 cement companies	The consolidation
	<i>Percent</i>	<i>Percent</i>
1921-25.....	19.82	21.02
1927-29.....	11.77	19.68
1930-33.....	¹ 1.17	² 14.39
1934-36.....	¹ 4.55	0.54

¹ Returns for only 16 companies available for years 1932-36.

² Loss.

These figures show that with the rapid expansion of the industry during the first half of the twenties, stockholders of the four predecessor companies earned a higher than average rate of return on their invested capital.

In 1927, 1928, and 1929, the 3 years following the consolidation, the consolidation continued to show a higher than average rate of return for its stockholders.

In the depression years, however, the stockholders of the consolidation fared far worse than the stockholders of the average cement company. During the revival after the depression, moreover, this company just about broke even, whereas the other companies earned on the average a small profit.

There were apparently two principal reasons why the stockholders of the consolidation earned such low rates of return on their invested capital, after 1929, even though the costs of this company were held down by drastic wage reductions. The first reason was the large increase in funded debt resulting from the consolidation. The predecessor companies had had \$2,200,000 bond issue, whereas the new company had a funded debt of \$12,500,000. During good times such increase in funded debt may not appear to be a great burden, but during the depression years the interest requirements were extremely onerous.

It should be remembered that in the process whereby the consolidation was created, the assets acquired of the four predecessor companies were recorded on the books of the consolidation at values approximately 100 percent in excess of the amounts at which they had been recorded on the books of such predecessor companies. The public, through its purchase of the securities of the consolidation at inflated values, has suffered heavy loss.

The promoters not only overcapitalized the consolidation, but they burdened it with a topheavy capital structure. This topheavy capital structure caused large losses to investors in equity securities. No

dividends have been paid on the common stock of the consolidated company since July 1, 1928, and no dividends have been paid on the preferred stock of the company since September 16, 1929. The unpaid dividends on the preferred stock amounted to \$64.75 per share, or \$7,847,700, on December 15, 1938.

The market value of the preferred and common stock has declined drastically since the consolidation. At the formation of the consolidation in September, 1926, the preferred and common stocks were publicly offered at \$99 and \$43 per share, respectively. In 1938, these values had declined to a range of \$10½ to \$30 per share for the preferred, and \$2½ to \$5½ for the common.

The second reason for the poor record of the consolidation over the present decade was the sharp decline in the average price realized by this company on its cement sales. During the depression years, 1931, 1932, and 1933, all cement companies found their profits greatly reduced or wiped out by the rapid decline in the realized price of cement, but the consolidation's price realization dropped even more rapidly than those of other cement companies.²

AN IMPORTANT STEEL MERGER

In the files of the Federal Trade Commission was found information bearing upon the motives underlying the consolidation of two important steel companies with the second largest steel company in the twenties. One company was acquired in October, 1922, while the second was absorbed in March of 1923. Accompanying this summary of the Commission's inquiry into the relative efficiency of large, medium-sized, and small business is a detailed statement prepared by the Commission's staff acquainted with the steel industry, setting forth the facts in the possession of the Commission with respect to the circumstances surrounding this merger.³

The records show that the two companies acquired had been very active competitors of the larger company for many years and that during the agricultural depression which immediately preceded the acquisition of these companies they had been very active price cutters and had taken large tonnages solicited by the larger company; that in the course of their solicitation, they had quoted and sold steel on an f. o. b. mill basis rather than the "Pittsburgh plus" destination prices which the larger company sought to preserve. The facts strongly indicate that one of the prime incentives for this merger was to end the price competition of the two smaller companies with the acquiring company and to restore the Pittsburgh plus or single basing-point system, which thereafter became effective in the territory east of Pittsburgh-Buffalo, an area dominated by the acquiring company.

² The detailed report of the Commission on this consolidation is submitted herewith, "Appendix B."

³ Appendix C.

Chart 16

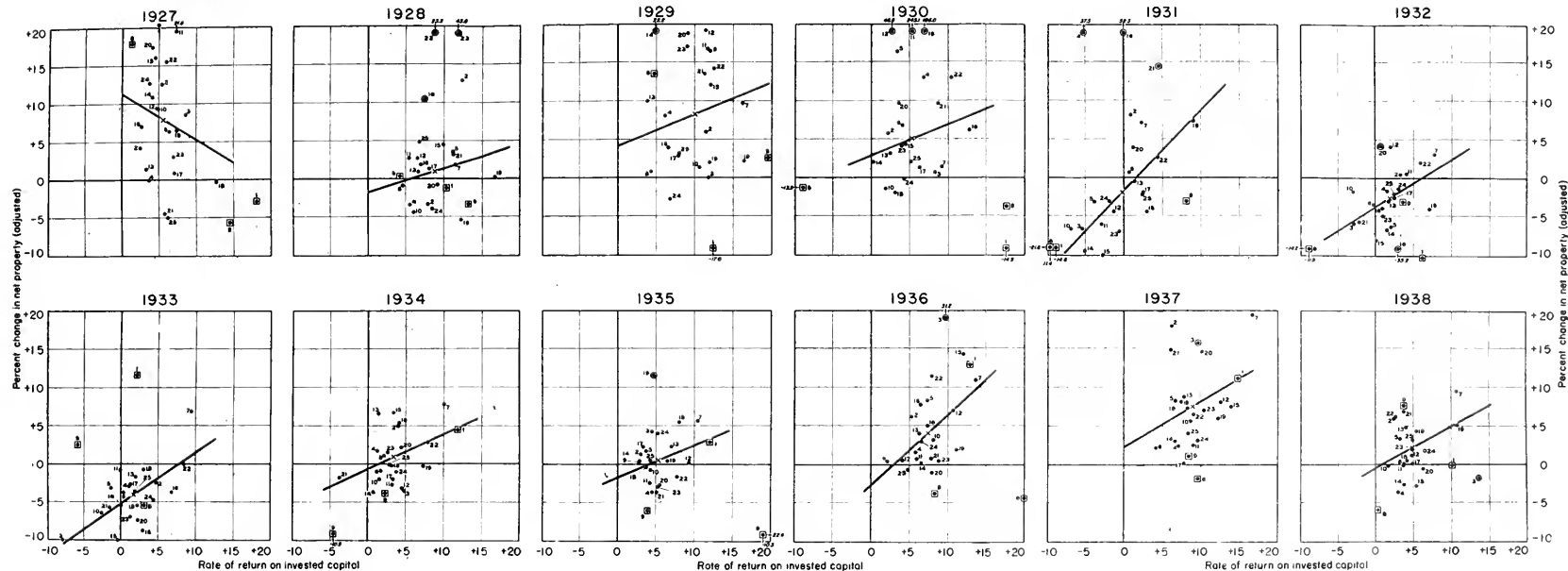
RELATION BETWEEN RATE OF RETURN AND RATE OF NET PROPERTY EXPANSION, BY YEARS, 1927-1938

SELECTED OIL-PRODUCING AND REFINING CORPORATIONS

■ Corporations omitted for all years

× Unweighted averages for corporations included

⊙ Corporations omitted for particular years only



TESTIMONY OF DR. FRANK A. FETTER ON EFFICIENCY IN MASS PRODUCTION

The Commission consulted Dr. Frank A. Fetter with respect to an analysis of the concept of "mass production." Dr. Fetter has for many years questioned whether very large corporations have promoted efficiency in mass production. Following is a brief summary of the testimony which Dr. Fetter submitted to the Federal Trade Commission for the purpose of this inquiry:²

* * * the term business is vague and variable, as are the words frequently employed as its synonyms—such as industry, enterprise, concern, company, corporation, etc. These terms are all used to designate both a single plant and various kinds of groupings or collections of plants. Confusion is therefore inevitable when these terms are used in relation to the word size.

The single-unit business, in its primary and typical form, presents few complications as compared with the plural unit kind or kinds. It is a single physical unit, and is at a single definite location. It is a unit technologically, that is, it is operated as a physical unit, and it is under a single ownership—individual, partnership, or corporation. It is the old fashioned kind of business which could and did act independently and compete in services and prices in the absence of clearly illegal conspiracy or contracts in restraint of commerce * * *. It is the kind of business organization which unquestionably most facilitates true market competition and the maintenance of the competitive system * * *. The decrease and disappearance of the single-unit business has created the problem which faces the public and this committee today.

It will be observed that combination * * * gives unity to the ownership, but not to the productive processes of the subsidiary plants. The physical plants and equipment remain largely under decentralized management; they still produce singly, while the officers of the controlling corporation are concerned almost wholly with financial and general organization and commercial matters. It is well to remember this when considering the claims of increased productive efficiency that are made for size attained by combination. * * *

* * * Horizontal combination is that in which plural plants of the same kind, normally separate physically and geographically and located more or less economically in relation to their market areas and consumers' destinations, are combined in respect to ownership by the various legal devices * * *. This gives unity in respect to commercial and price policies, but does not unify the productive plants physically, and usually it neither changes their number nor increases their unit size * * * financial size attained by horizontal combination is constantly confused by the apologists of bigness with increased size of single plants * * *.

Mass production primarily and generally means a relatively large degree of specialization in a single plant which turns out a large number of a particular kind of product, or of a particular pattern, model, or size of a product. It is a relative term, as it may apply to a greater or less degree of specialization and to a larger or smaller mass of products of the same kind from the same factory * * *.

It is apparent that "the economy of large production" * * * is essentially a phenomenon of the single-unit plant rather than of plural-unit plants. It is a matter of internal arrangements and economies within a single plant. It is technical or technological, not financial or commercial; that is, it is the sum of various economies of time, materials, and wear and tear of machinery combined with labor used in a continuous process on one product, as compared with a more or

¹ From: Who's Who in America, vol. 20, 1938-39. Frank Albert Fetter, professor political economy and finance, 1901-10, economics and distribution, 1910-11, Cornell University; professor political economy, Princeton, 1911-31, professor emeritus since 1931. Author: Principles of Economics, 1904; Economic Principles, 1915; Modern Economic Problems, 1916, 1922; Masquerade of Monopoly, 1931.

² Dr. Fetter's complete testimony is herewith submitted as Appendix D.

less discontinuous process with change of products and patterns. Certain of these advantages are well recognized and elementary, and call for no exhaustive enumeration. They include (1) the more use of highly specialized machinery for a single product, thus reducing the machine cost attributable to each unit of product; (2) less misuse of machines during changes and adjustments for sizes, patterns, etc.; (3) reduction of labor cost for changes of machines for gauges, processes, etc.; (4) reduction of labor cost through increased skill resulting from specialized practice; (5) various miscellaneous advantages, such as economy in factory space, storage space, use and waste of materials, etc. Such economies of production in single plants should not be confused with certain other actual or alleged economies of large size in the case of plural-unit combinations, such as mass buying, monopolistic buying and selling power, economy of salesmanship due to absence of competition, etc. Obviously, the economy of mass production in its proper sense does not even imply the necessity of very large size in a single-unit factory. It is more a matter of the degree of specialization attainable within a single factory than a matter of the size of the plant as a whole. A small factory employed on a few patterns of a single kind of product may get a fuller measure of economy of mass production than a much larger factory which produces a variety of products * * *

We have to do here with an optimum point in the economy of mass production. It is beneficial up to the point of economic maximum of the single plant, but beyond that point it turns into a disadvantage * * *. It is often implied and sometimes explicitly declared with an appearance of seriousness that any limitation of the size of corporations means a return to the hand tools and the small neighborhood shops of the middle ages. The exaggerations and error of such a statement surpasses absurdity. It implies first of all a confusion of combinations with specialized factories of optimum size * * *. I know of no serious suggestion from any critic of big business that any single producing plant shall be smaller than the optimum size for the most efficient operation in the area served, or that it shall use any but the best tools and methods which modern science and the technical arts make possible.

HORIZONTAL COMBINATION IS NOT MASS PRODUCTION

In the light of these distinctions, what is to be thought of the claim that the economy of mass production results from horizontal merger of duplicate plants under a single ownership? What technical economy of mass production could result from the mere common ownership of two or more duplicate plants? * * *

Even though no technical economies result from the larger size of combinations, there may be, and doubtless are, certain advantages to some persons and of some kind, or else there would be no such corporations formed. But personal advantage and private profit are no sure proof of technical economy * * *. If the foregoing analysis is sound, it follows that industrial combination cannot make for economy of mass production in the technical sense, beneficial to the whole community, though it may create some other kind of advantages to those who form or control the combinations.

Simple as is the distinction, when formally set forth, between a large single plant with its economy of mass production and a big business in the sense of the combined ownership of plural plants, it is constantly ignored, either innocently or intentionally, with resulting great confusion of thought.

Professor Fetter also pointed out to the Commission that so-called interplant economies as distinguished from the fundamental economies of mass production, i. e., intraplant economies, where they existed, were often attributable to the ability of aggregated financial power to exploit a fair and free competitive system. Dr. Fetter referred to certain fallacies as to integration, as distinguished from horizontal combination in business. Under the title "Assumed Economy of Integrated Ownership":

Attention has before been called to the error of identifying ownership integration of geographically separate plants and resources at different stages of production with the economic integration of successive physical processes in a single plant. The real economy of physical integration in some cases cannot properly be attributed in all cases to mere unity of ownership * * *

Very commonly a different explanation is advanced for the assumed economy of mere ownership combination. Integrated ownership, it is said, saves in the later

stages the profits of manufacture which otherwise would have to be paid to independent producers at the earlier stages. This naive theory is rejected by every competent student of the subject. Profits are the return on investment, and investment at each stage is no less after than before the integration—usually more. Each plant continues to have a capitalization on which it must earn profits pro rata, if possible. The rate of profit on the whole investment of an integration cannot as a rule be greater unless some new economies result, and that has to be shown.

* * * A much more important question is that of the efficiency in the technical management of integrated plants as compared with that of independent plants specializing on fewer products and selling to numerous buyers. Again it is a question of the economy of mass production.

Dr. Fetter believes that integration is often a form of unfair competition in that it permits the large company with resources sufficient to integrate to discriminate in prices of particular products and thus to undersell smaller corporations not financially able to do so.³

Dr. Fetter contended that integration in American industry has afforded particular protection to the unfair competitive practice of price discrimination, in that integration can effectively conceal the operation of such a practice. While contending that the combination of various plants engaged in different stages of production under a unified management does not increase the real efficiency of mass production Dr. Fetter frankly stated to the Commission:

There appears to be small chance of the ultimate survival of independent unintegrated fabricating plants in various industries under these conditions.

Dr. Fetter also reinforced the testimony of Dr. Myron W. Watkins with respect to the claim that combinations have more effectively promoted scientific research in industry.

The claim that more and better research to improve products can and does result from great combinations was one of the earliest and has been one of the most persistent. But grave doubts hang over such a claim. The subject is in need of much completer study. The United States Steel Corporation, for which this claim was strongly made at its inception was long a notorious laggard and all the significant advances in metallurgy, mostly the development of alloys, for a quarter of a century were made by the comparatively small companies. Some of the most epoch making inventions of our times have come from independent laboratories, such as that of Thomas Edison, or have been merely the last steps taken in the application of pure science discovered at the universities or by scientific workers of the Government. Most hopeful, too, are cooperative plans of research by small industry. By and large, large combinations seem to have exerted themselves far more in buying up patents for use or suppression than they have in leadership of research and invention. This subject is closely connected with that of the revision of the patent policy.

Professor Fetter also pointed out to the Commission that critics of large size in business do not propose to "atomize" American industry back into a handicraft stage.

No critic of "big business" in America, so far as I am aware, has ever proposed that any single plant shall be reduced below the optimum size, that is, the size that makes possible the maximum technical efficiency of mass production. In view of the existing state of the arts, in manufacturing and transportation. The position and motives of those who criticize big business is therefore misrepresented when it is said that they would like to reduce industry to mere atoms, and return to the hand tools and methods of the Middle Ages. That is a caricature of the truth and a distortion of the issue.

³ This advantage becomes particularly unfair if the large company attempts to monopolize the sources of raw materials or the means of transportation. The United States Steel Corporation's early attempts to buy up all important iron ore reserves and the Standard Oil Co.'s desire to control all important pipe lines offer excellent examples of the unfair possibilities in the striving for integration.

Professor Fetter's testimony may be summarized under the following points:

- (1) Efficiency in mass production means obtaining as low a cost as possible within a plant by the effective coordination of men, machines, and materials.
- (2) Mere combination of plants does not increase the efficiency of mass production in the single plants. Additions of plants increase the difficulties of corporate management in effectively supervising the internal efficiency of each plant. When plants are combined, certain other general economies may be achieved, but these in the main represent the ability of aggregated financial resources to exploit a free and fair competitive system.
- (3) Such economies, however, even though achieved at the expense of free and fair competition, may be more than offset by increasing plant costs due to losses in managerial efficiency, which results when too many plants have to be managed.
- (4) Whether the mergers or combinations are horizontal or vertical, the foregoing principles apply. Horizontal combinations do not increase the efficiency of mass production; neither do vertical combinations except in a relatively few cases where vertical integration is related to the elimination of technical waste in production. Both in horizontal combination and vertical combination the general effect is to decrease managerial efficiency.
- (5) Large corporations did not create mass production. Mass production existed before the creation of great corporations in American business 50 years ago. Mass production is, of course, conducted today by large corporations. But it could be achieved more effectively by smaller corporations. More efficient mass production would be achieved if corporate management confined itself to managing a smaller number of plants of optimum size, rather than attempting to manage numerous plants of diverse size, often producing multiple products, and widely dispersed geographically. Real efficiency in mass production is impaired when corporate management either fails to concentrate its energies on the achievement of intraplant economies, or when the number of plants under the direction of a management are so numerous and complex in their activities that an effective supervision of such plants internally becomes a physical impossibility. The greatest efficiency in mass production is attained when men, machines and materials are coordinated to a maximum degree of effectiveness within a plant. Corporate management in large corporations today is generally too remote from plants and factories to effectively organize them internally. Such management generally concentrates its energies on financial policies which may be of benefit to some persons, but not necessarily to the public, or even to the stockholders of the corporation.

CRITICS OF THE FIRST MERGER MOVEMENT IN AMERICAN BUSINESS

Students of American business generally agree that there were two important merger movements in the United States. The first period was from 1890 to 1904. The second was from 1919 to 1928. Through the merger process many thousands of originally independent establishments disappeared, narrowing in all directions the field of competition and enlarging the domain of monopoly.

In 1921 Prof. A. S. Dewing,¹ then at Harvard University, made a study of the notable mergers that had occurred in the first merger period.

Thirty-five industrial combinations were chosen, which met the following six conditions: The combination must (1) have been in existence at least 10 years before 1914; (2) have been formed as a combination of at least five separate and competing plants; (3) have been of national, rather than mere sectional or local significance; (4) have published financial reports in which at least some degree of confidence could be placed; (5) have available published or acceptable financial reports covering the separate plants prior to the time the combination was effected; and (6) the group as a whole represented a wide diversity of industries.

Roughly, the promoters of these consolidations believed or professed to believe that the mere act of consolidation would increase the earnings about one-half. In actual results the earnings of the separate companies before the consolidations were nearly a fifth greater (18 percent) than the earnings of the consolidated companies for the first year after consolidation. The promoters expected the earnings to be a half greater than the aggregate of the competing plants; instead they were about one-fifth less.

Nor were the sustained earnings an improvement, for the earnings before the consolidations were between one-fifth and one-sixth greater than the average for the 10 years following the consolidations. In 23 of the 35 consolidations, the earnings in the next 10 years were less than the earnings of the constituent companies before the merger, and in half of these, less by from one-third to nine-tenths. In the aggregate, the earnings of all 35 consolidations were nearly one-fifth less than those of the separate competing establishments prior to consolidation, and this in spite of the inclusion in the latter period of earnings of large additions to capital and plants of new financing, the amounts of which could not accurately be estimated. Even the United States Steel Corporation earned only about 85 percent as much in its first 10 years (1901-11)² as the previous earnings of its constituent companies.

¹ From *Who's Who in America*, vol. 20, 1938-39: Arthur Stone Dewing, author: Assistant in philosophy, Harvard, 1902-13; instructor in economics, 1911-12, and 1919-20; assistant professor of economics, 1920-22; associate professor of finance, 1922-27, professor, 1927-33. Author (among others): *Promotion and Reorganization of Industrial Corporations*, 1914; *Financial Policy of Corporations*, 1920, 3d rev. ed., 1934; *Corporation Finance*, 1921, rev. ed., 1930; *The Corporation—A Study of Its Financial Structure*, 1934.

² The period from 1901-11 is regarded by Professor Fetter as a more prosperous period in business than the preceding decade.

At the time this first great merger movement was in progress, many noted persons spoke out critically against the size of the corporations being created. Some bluntly called attention to the fact that they doubted if human brains existed to competently manage the vast aggregations which were appearing. As noted an economic scholar as Prof. A. T. Hadley, president of Yale University,³ said frankly in *Scribner's Magazine* in 1899:⁴

Just as in an army, there are many who can fill the position of captain, few who can fill that of colonel, and almost none who are competent to be generals in command—so in an industrial enterprise there are many men who can manage a thousand dollars, few who can manage a million, and next to none who can manage 50 million.

Other economic commentators pointed out that the success or failure of an enterprise is in fact usually determined by one man, and there is a very definite limit to what one man can do. Even in those far-off times a noted Wall Street figure foresaw the connection between size in business and the diminution of incentive to run that business efficiently. A salaried employee, a manager or superintendent, is hardly likely to give such close personal attention to a plant in which he has no large financial interest as an individual who owns the plant. Thus, Charles R. Flint, who recorded himself in the *American Who's Who* as "the father of trusts," testified frankly before the Industrial Commission:⁵

One of the fundamental difficulties of the management of these corporations lies in the fact that the managers have a smaller percentage of interest in the operations that they are conducting under the plan of an industrial combination than they had when it was an individual property, or when they had a large interest in a small corporation. That is fundamental. There is no way in which that condition can be changed.

In another part of his testimony before the Commission, Mr. Flint thought that in certain businesses centralization could be extremely dangerous:

In my judgment one of the dangers to the success of great industrials is that parties, without being intellectual giants, are liable to attempt to centralize too much. Taking men as they are, I think that in businesses where high-class ability is required at many places, and where the business is not of such a character that its conduct can be reduced to rules, and where its success depends on local ability and local judgment, and where the efficiency of the selling department is involved with long-time personal relations, such a business it may be very dangerous to suddenly centralize. It is far wiser, I think, in a case of that kind, to sustain the independence and individuality of the separate concerns.

There is the statement of Mr. William Griffiths, manufacturer of tin plate, replying to a question of the Industrial Commission as to the ability of the American Tin Plate Co. to freeze out competitors by underselling them:

Well, I intended to answer that question in the remarks that I made, that I thought the independent concern could possibly economize to a greater extent, that concern being directly under the owner's eye, than the American Tin Plate Co. I have not the least hesitancy in saying that it is costing them more today to manufacture tin plate under their present operations and administration than it was under individual ownership, because the man that owned the plant—he

³ From *Who's Who in America*: "Arthur Twining Hadley: Lecturer on railroad administration, 1883-86; professor political science, 1886-91; professor political economy, 1891-99; president, 1899-1921 (emeritus), Yale University. Author (among others): *Economics—An Account of the Relations Between Private Property and Public Welfare*, 1896; *Economic Problems of Democracy*, 1923; *Conflict Between Liberty and Equality*, 1925."

⁴ *Scribner's*, vol. 26, pp. 604-610, at p. 607.

⁵ *Industrial Commission*, vol. 13, p. 85.

was directly on the ground, and if he had practical knowledge of the business he was cudgeling his brain all the time in the direction of his own interest.⁶

Mr. Griffiths was a partner in a tin-plate company which was taken over by the American Tin Plate Co. Mr. Griffiths' company was taken over against his wishes. He held a minority interest in the company, and his partners overruled him. Further on in his testimony Mr. Griffiths said:

The district manager is supposed to supervise, superintend, and direct the manufacturing. Now his district, as I said before, possibly will number possibly 5 or 6 different mills or works, representing possibly 20 or 30 mills. It is simply impossible, in a business involving so many details, for a man making his appearance once a week, even though he is a very practical fellow and possesses a world of information on that subject, to get good results.

There is the statement of Mr. Hugh Campbell, president of the United States Tobacco Co., challenging the belief that large industrial combinations really effect economies:

They may be able to buy a few things cheaper, but as regards the raw material—leaf tobacco, which is, of course, the principal ingredient entering into the manufacture of tobacco—they must make their purchases at auction on the warehouse floor just the same as any small manufacturer; in that they have no advantage. On the other hand, they have very expensive offices and officers, and I think that any little advantage they may have in the price of some materials, such as foil, printing, and so on, will be far more than offset by reason of the expensive way in which they do business and advertise.⁷

There is the statement of Gen. John McNulta, receiver of the Distilling & Cattle Feeding Co., replying to a question as to the advisability of bringing under one ownership plants that are scattered all over the United States (the old distilleries and cattle feeders organization was composed of 65 companies engaged primarily in distilling alcoholic spirits):

There is absolutely no use of combining where they are scattered all over the country. If combinations are formed it is to get a corner on the market and better somebody's fortune. There is no practical advantage in it; not a bit. For instance, the distilling people had distilleries in * * * and in a dozen different places. There was absolutely no necessity for combining. It was only to control the market, limit the output, and commit extortion. They attempted to do it and failed, simply because, as I have explained to you, it did not require a large capital to get up competition—to build new distilleries. Why, they threw away property that cost them hundreds of thousands of dollars merely to eliminate it; they paid men for staying out of the trade; they paid rent on this abandoned land right along from year to year, nearly \$100,000 a year. I have got on the roll here, I think, \$100,000 approximately, if I remember it, a year for rent for nothing. They rented the places where the distilleries were in order to put them out of the way.⁸

There is the statement of Mr. George V. Cresson, president of a machinery manufacturing company, who put his finger squarely on one of the existing causes of the high heart mortality rate among American businessmen today, and who also commented that size in business can frequently become so great as to fall to pieces from the inability of managers to properly manage it:

No; I think that consolidation of business is productive of something worse than that, and it acts in this way, according to my idea: If I am running a business I know all about it. It has been said by people who are pretty good manufacturers and merchants that when a business gets too big for one head to manage

⁶ Industrial Commission, vol. I, p. 899, et seq.

⁷ Industrial Commission, vol. 13, p. 309.

⁸ Industrial Commission, vol. I, pp. 238-239.

it is not managed, and I think that is so. There have been a great many different kinds of business consolidated, and sometimes for a while they are successful, but if you will carefully watch them you will find they are not successful unless the man at the head of it is a good deal better than the average run of men. In any event, the man at the head of that consolidated concern has a terrible bad life of it. He has to work a great deal harder, just as much harder than each of those concerns did before. He has to be the head of the whole thing. I have seen these men in many cases gradually failing until they dropped out; then somebody else tried to do the business, and they could not do it, and the consolidation fell through. I think business should be done as it has been done to a certain extent, certainly with modern improvements and things of that kind, but the old story will hold good, as it always did. You want to get a business done by men of average intelligence, strength, and health, so as to stand the racket; then you can run the business right. But consolidations to eliminate expenses are, I think, a mistake.⁹

"Whereas competition," wrote Prof. Eliot Jones, author of *The Trust Problem in the United States* (1929), "provides a stimulus to the introduction of improved methods, the tendency of monopoly is toward stagnation." And the author quotes John Stuart Mill:

To be protected against competition is to be protected in mental dullness.

And, Jones concludes, "there is much evidence to support this view."¹⁰

Critics of size in business have commented on the fact that for many years, and even as late as 1920, leading railroad executives in the United States opposed the proposition to establish regional railroad monopolies, their contention being that it was essential that competition in service be maintained. The chairman of the Westinghouse Airbrake Co., in a statement prepared for the Senate Committee on Interstate Commerce, opposed the proposition on the ground that it would retard invention:

As a rule, railway managers were not overenthusiastic about testing untried devices, and it became necessary to find the right man and auspicious conditions, in order that the desired development and demonstration might be made. This process was greatly facilitated by the number of railways to which appeals could be made.¹¹

Another practical businessman, a manufacturer, summed up what he regarded as an inherent weakness in size when he made a remark quoted by Professor Dewing in his book, *Corporate Promotions and Reorganizations*.

There comes a point when the man in the twentieth story of an office building cannot make up, no matter how brilliant he may be, for the waste and shiftlessness of a variety of superintendents in many mills, hundreds of miles away in all directions.¹²

A conservative critic of business, Prof. J. J. Bullock, of Harvard University, wrote:

There may easily arise an irrepressible conflict between that central responsibility necessary for intelligent unified management and that individual freedom and energy requisite for the healthy life of the separate members.¹³

Prof. Eliot Jones, commenting on this, said:

What is thus gained at the center in the way of control and guidance might thus be lost through reduced energy and efficiency at the circumference.¹³

⁹ Industrial Commission, vol. 14, p. 272.

¹⁰ *The Trust Problem in the United States*, p. 535 (1929).

¹¹ *The Trust Problem in the United States*, Eliot Jones, pp. 535-6 (1929).

¹² *Corporate Promotions and Reorganizations*, Dewing, p. 559.

¹³ *The Trust Problem in the United States*, Eliot Jones, p. 538.

In summing up this first merger movement in American business, Prof. Eliot Jones wrote, in 1929:

It must be admitted that the showing of the trusts has not realized the high hopes that were entertained for them upon their formation a generation ago.¹⁴

In the last 10 years, however, there has been a vigorous movement on the part of many important American businessmen to obtain legislative sanction of monopoly in business. The argument is again being made that bigger business will promote efficiency and achieve economy and benefit consumers.

¹⁴ The Trust Problem in the United States, Eliot Jones, p. 541.

SIZE IN AMERICAN BUSINESS TODAY

GROWTH IN THE SIZE OF BUSINESS UNITS WITHIN A SINGLE INDUSTRY

If the doubts of many businessmen and noted economists about the efficiency of great corporations formed 40 to 50 years ago had any validity then, they apply with far greater force to the American business world of today. Now there are units in American business which dwarf into insignificance the largest corporations created toward the end of the last century in American business. For instance, the famous Standard Oil Trust was in its day considered a very large business in American industry. In 1882 this company was capitalized at \$70,000,000, and the value of its properties was appraised at \$55,000,000, according to testimony taken before the Bureau of Corporations.¹ In 1892 this large concern had increased its capitalization to \$102,233,000, and the appraised value of its property was estimated by testimony to be approximately \$121,631,312. In less than 9 years, however, the United States Steel Corporation was organized with a capitalization of approximately \$1,300,000,000. The Bureau of Corporations estimated that this capitalization included approximately \$600,000,000 of watered stock. Making allowance for the watered stock, it can safely be estimated that the United States Steel Corporation was between six and seven times as large as the famous Standard Oil Trust of the last century.

The great steel corporation of 1901, however, was destined for phenomenal growth. At the time of its formation, United States Steel Corporation controlled approximately 66 percent of the output of steel ingots, in the steel industry. Today, however, it controls approximately only 40 percent of the output. This is not because the United States Steel Corporation has grown smaller. As a matter of fact, it has grown very substantially. When organized, it controlled 7,000,000 tons of ingot capacity in the steel industry. In 1929 it controlled 25,000,000 tons. The unwatered assets of this corporation today have increased from approximately \$700,000,000 to over \$2,000,000,000. The United States Steel Corporation, therefore, has grown between three and four times as large as it was at the time of its formation. Its tremendous growth provoked the following comment in *Fortune Magazine* for March 1936:

When the elder Morgan gathered 65 percent of the steel industry into one incredibly powerful company, endowed with the finest transportation facilities every owned by a nonrailed road company and bulwarked with a quasi-monopolistic control of the iron-ore reserve of the nation, when he had finished his titanic labors, he would have been angry indeed if some bespectacled pip-squeak of an economist had told him that he had created a corporation too big and too powerful for its own good. Yet such would have been no more than the truth. The trouble with the United States Steel Corporation can be briefly stated: it has been too big too long.

¹ Report of the Commissioner of Corporations on the Petroleum Industry, pt. I, May 20, 1907.

If the Standard Oil Trust of 1892 at that time was considered a very large concern, what can be said of one offshoot of this trust, the Standard Oil Co. of New Jersey today? This corporation today has assets of more than \$2,000,000,000. Expressed mathematically this represents an increase in the difficulties of managing size efficiency over that of the old Standard Oil Trust of approximately 2,000 percent. In many fields of American industry today we can find corporations which are many times the size of the old Standard Oil Trust and even many times the size of the United States Steel Corporation of 1901. For instance, the American Telephone & Telegraph Co. has been estimated to have assets of more than \$5,000,000,000. The Metropolitan Life Insurance Co. of New York is also reported to have assets of more than \$5,000,000,000.

CONGLOMERATES

There is another characteristic of size in American business today which increases the difficulties of managing size efficiently. The difficulties of effectively managing size in business can become too great even if size confines itself to the operation of a single business and to a certain class of products. But these difficulties may become greater where size operates to bring under a common management many diverse businesses and a great number of products. Efficiency, as Adam Smith envisioned it, is the case of a shoemaker sticking to his last; and the "last" in many American businesses has already become extremely complex. Today, however, in American business we have many very large corporations which are engaged in the operation of numerous diverse businesses and the production of a great variety of diverse products. This is not mass production, which means specialization; rather it is diversification of production under one management. Students of the problem of business efficiency often wonder how a board of directors of even 15 or 20 extraordinary businessmen could be soundly acquainted with the labyrinthic production program of these conglomerates. Following are examples of the multiplicity of products and diverse businesses which have been brought under a common management in the American business structure:

Example 1.

1. Dyestuffs.
2. Dyestuff intermediates.
3. Organic chemicals.
4. Chemicals and dyes for the petroleum industry.
5. Sulfur dioxide.
6. Nitrated filter cloths.
7. Detergents.
8. Wetting-out agents.
9. Textile assistants and finishing agents.
10. Solvents.
11. Aromatics.
12. Perfume.
13. Photographic and pharmaceutical chemicals.
14. Antioxidants.
15. Vulcanization accelerators.
16. Rubber colors.

Example 1—Continued.

17. Neoprene.
18. "SDO2" corrosion-resistant coating.
19. Neoprene latex.
20. Rubber peptizing agents.
21. Accelerator retarders and activators.
22. Special chemicals for rubber.
23. All completely and specially denatured alcohol formulas such as antifreeze alcohol and industrial solvent.
24. Motion-picture film.
25. Portrait film.
26. X-ray safety film.
27. Lithopone.
28. Titanium dioxide.
29. Extended titanium pigments.
30. Lead-zinc oxide.

Example 1—Continued.

31. Aluminum hydrate, and
32. Dry colors.
33. Acetate rayon yarn and staple fiber.
34. Commercial cellulose acetate flake.
35. Viscose rayon yarn and staple fiber.
36. Cellulose film.
37. Cellulose caps and bands for sealing containers.
38. Transparent seamless tubing.
39. Cellulose sponges.
40. Ammonia and allied products.
41. Methanol.
42. Higher alcohols.
43. Urea.
44. Fertilizer compound.
45. Hydrogenated products.
46. Methacrylate resins.
47. Aliphatic acids and esters.
48. Anhydrous ammonia in cylinders.
49. Aqua ammonia in drums and tank cars.
50. Ammonium carbonates.
51. Pyroxylin-coated and impregnated fabrics.
52. Sponge-rubber non-skid underlay.
53. Sponge rubber rug cushioning.
54. Pyroxylin-impregnated washable window-shade cloth.
55. Rubberized flexible ventilating duct.
56. Rubberized fabric for heavy duty chair and automotive upholsteries.
57. Rubberized fabric for outerwear garments.
58. Latex-saturated fiber for midsole and innersole materials
59. Hospital sheeting.
60. Neoprene-treated textiles.
61. Nitrocellulose.
62. Solvents.
63. Leather cements.
64. Pyroxylin solutions.
65. Paints.
66. Varnishes.
67. Synthetic-resin enamels.
68. Bronze powder.
69. Special finishes for automobile refinishing and all industrial purposes.
70. Polish.
71. Automobile wax.
72. Top dressings.
73. Protective cream and other automobile specialties.
74. Cellulose nitrate plastic.
75. Cellulose acetate plastic.
76. Methyl methacrylate resin, all in the form of sheets, rods, and tubes.
77. Molding powders.
78. Resin denature material.
79. Monofilaments and bristling filaments.
80. Toiletware, including brushes, combs, hair ornaments, and novelties.

Example 1—Continued.

81. Sodium.
82. Cyanides.
83. Peroxides.
84. Chlorine.
85. Heat-treating salts.
86. Formaldehyde.
87. Hexamethylenetetramine.
88. Gold, silver, and platinum preparations.
89. Ceramic materials of all types.
90. Methyl chloride and other refrigerants.
91. Nonflammable solvents and other chemicals for all industries.
92. Preparations to prevent and control many seed-borne plant diseases.
93. Preparations to improve crop yields.
94. Shotguns.
95. Rifles.
96. Cartridges and shot shells.
97. Traps.
98. Targets.
99. Gun grease and oil.
100. Rust remover.
101. Powder solvent.
102. Complete line of pocket knives.
103. Professional and household cutlery.
104. Dynamite.
105. "Nitramon" blasting agent.
106. Black powder in granular and pellet form.
107. Blasting accessories.
108. Complete line of products for all industrial and agricultural uses.
109. Torpedoeing oil and gas wells with liquid and solidified nitroglycerin to increase productivity.
110. Chemicals for leather, manufacturers.
111. Chemicals for textiles, manufacturers.
112. Chemicals for paper manufacturers.
113. Chemicals for paint manufacturers.
114. Chemicals for rubber manufacturers.
115. Chemicals for battery manufacturers.
116. Chemicals for ceramics manufacturers.
117. Chemicals for sheet, tin plate and steel manufacturers.
118. Chemicals for petroleum manufacturers.
119. Chemically pure acids.
120. Electrolyte.
121. Filter alum.
122. Insecticides and
123. Fungicides for fruits, vegetables, lawns, and flowers.
124. Silicate of soda.
125. Soldering fluxes.
126. Zinc.
127. Wood preservatives.

Example 2.

This corporation runs at the same time businesses producing numerous breakfast cereals, animal feeds, gelatine, ice cream mixtures, a medley of desserts, a coffee and tea business, a cake and bread business, a chocolate and cocoa business, a coconut-meat business, a sirup business, a nut business, a salt business, a baking-powder business, a business of manufacturing laundry aids, an oyster business, a business of producing frosted foods, a business of processing corn products, a business of canning fruits and vegetables, a business of manufacturing cottons and shipping cases and bags, a business of manufacturing tin cans and a business of meat packing. This corporation was formed by promoters in the 1920's.

Critics of excessive size in business who view this kind of industrial phenomena often ask, "Can one man, acting as president of either of these corporations, possess the capacity to know enough about such numerous and diverse businesses to effectively administer them from the standpoint of eliminating waste, promoting efficiency and technical progress in all of them at the same time?"

MULTIPLE DIRECTORSHIPS

The difficulties of efficiently managing large American businesses have been complicated by another important factor—that of interlocking directorates. The American Telephone & Telegraph Co. is a huge corporation bringing to its board of directors and officers tremendous problems in efficient management. This corporation has approximately \$5,000,000,000 of assets, 700,000 stockholders, offices in nearly every city and hamlet in the United States; it supplies the entire radio industry with a program transmission service, controls the largest corporation in the world producing telephone equipment, owns one of the greatest research and scientific laboratories in American industry, the Bell Laboratories, furnishes equipment and technical service in connection with talking pictures for the whole motion-picture industry in the United States, furnishes sound equipment to the phonograph industry, manufactures turntables for mortuary parlors, public address, phonograph, and radio distribution systems, terminal apparatus for submarine cables, acoustic engineering apparatus, race-timing apparatus, electro-surgical knives and other medical equipment, aids to hearing, and photo-electric cell applications; controls an extensive interoceanic telephone system with France, England, and South America; has a large financial interest in the Bell Telephone Co. of Canada; has an extensive interest in the Cuban-American Telephone Co.; owns the Trans-Pacific Communications Co., Ltd., which maintains radio-telephone communication between the United States and the Hawaiian Islands; controls more than 200 corporations, owns 80,000,000 miles of wires, employed in 1929 nearly 400,000 people, and had a pay roll of nearly \$550,000,000; owns more than 21,000,000 independent telephone stations in the United States; received in 1930 a gross income of more than \$1,000,000,000.

The 19 directors of the American Telephone & Telegraph Co., however, do not devote their full time to this huge corporation. These 19 directors also have 172 other business affiliations.¹ On the average, each director of this corporation is concerned with 9 other businesses at the same time. The record shows Mr. Charles Francis Adams, a director of the American Telephone & Telegraph Co., helping to direct 25 other businesses, ranging from the gas business, the carpet business, the trust business, the railroad business, the sugar business, the real estate business, the life insurance business, the savings bank business, the electrical business, the smelting business, and the drug business, to the investment trust business. The record shows Mr. Phillip Stockton, another director, directing the affairs of the American Telephone & Telegraph Co. and 29 other businesses. Mr. Stockton is in the banking business, the insurance business, the sugar business, the fine-spinning business, the gas business, the securities business, the safety razor business, the educational business, the submarine signal business, and many others. The record shows the president of the

¹ Appendix E.

corporation, Mr. Walter Gifford, who is of course the chief executive officer of the American Telephone & Telegraph Co., also helping to direct one of the large commercial banks of the country, a savings bank in New York City, a university, a philanthropic organization, and directing the policies of two of the greatest scientific and educational organizations in America—the Rockefeller Foundation and the General Education Board. There is submitted with this report a list of the directors of the American Telephone & Telegraph Co. with a list of their outside directorships, and, where the data were available, an effort has been made to show the amount of assets each director is really trying to direct, including those of American Telephone & Telegraph Co.² This table shows that the 19 directors of the American Telephone & Telegraph Co., instead of concentrating all of their time on the direction of a mere \$5,000,000,000 of assets, are actually trying to direct more than \$38,000,000,000 of assets. The Pujo committee, appointed in 1912, alarmed the country by its findings that the House of Morgan was indirectly interlocked with \$22,000,000,000 of invested capital. That was approximately 28 years ago. Today we have one corporation in the United States directly interlocked with more than \$38,000,000,000 of assets. This is after eliminating duplications of assets in cases where more than one director of the American Telephone & Telegraph Co. was affiliated with another single company.

The United States Steel Corporation is approximately a three-billion-dollar affair.³ Internally it represents hundreds of corporations that were engaged in making at one time many diverse and complex steel products, which have been consolidated into a giant edifice—the United States Steel Corporation. It owns and controls the greatest iron ore reserves in the Nation; owns and controls an extensive railway system; owns and controls an extensive water carrier system; owns and controls the largest cement corporation in the world; owns and controls tremendous coal interests; owns and controls large dolomite and limestone quarries; owns and controls timber interests; makes 50,000 different steel products; owns and controls between 500 and 600 mills; and employs more than 220,000 workers. A discerning observer might come to the conclusion that the directors of this corporation ought to have their working day completely taken up by its affairs alone if they are really directing it. Yet the directors of this giant corporation are concerned with directing a good many other huge and diverse enterprises at the same time.

The 18 directors have 92 other business connections representing an average of 5 outside businesses per director.⁴

The record shows Mr. Edward R. Stettinius, chairman of the board of United States Steel Corporation, helping to direct the largest life insurance company in the world, a five-billion-dollar organization, the Metropolitan Life Insurance Co., and helping to direct a museum of science and industry.

The record shows J. P. Morgan running on the outside the largest investment banking house in the world and directing the business fortunes of the Pullman Co., while at the same time helping to administer the policies of the United States Steel Corporation.

The record shows the president of the United States Steel Corporation, Mr. Benjamin F. Fairless, holding down the job of four other

² See Appendix E.

³ Total assets are before deducting depreciation reserves.

⁴ See Appendix F.

presidencies in four other corporations, and a total of nine directorships. It is true that these other presidencies of Mr. Fairless are in subsidiaries of the United States Steel Corporation. But one wonders how it is humanly possible for a man to be president of the United States Steel Corporation and president of four other companies at the same time, whether subsidiaries of the United States Steel Corporation or not, and really be effective in the elimination of inefficiency in these businesses.

The record shows Mr. Philip R. Clarke helping to direct the Pure Oil Co., and also serving as president and director of one of the largest banks in Chicago, the City National Bank & Trust Co. Mr. Nathan L. Miller is not only a director of the United States Steel Corporation, but is an active partner in one of the largest law firms in New York City and also a trustee of an important life insurance company. The record shows Mr. Thomas W. Lamont in the securities business, the trust business, the agricultural business, the construction business, the railway business, and the educational business, in addition to his part-time job of directing the United States Steel Corporation; David F. Houston helping to manage the American Telephone & Telegraph Co., the Guaranty Trust Co. of New York, the Mutual Life Insurance Co. of New York, and the North British & Mercantile Insurance Co.; Sewell L. Avery directing a gypsum company, the Chicago Daily News, the packing organization, Armour & Co., serving as chairman of the board and director of Montgomery Ward & Co., directing the People's Gas Light & Coke Co., the Pullman Co., and the Pure Oil Co. The record shows Mr. Myron C. Taylor, directing the First National Bank of New York, the New York Central Railroad, the Atchison, Topeka & Santa Fe Railway, the Mutual Life Insurance Co., and the American Telephone & Telegraph Co. Recently Mr. Taylor, in addition to his varied directorship responsibilities, became the representative of the United States Government at the Vatican.

The record shows Mr. Robert C. Stanley directing the International Nickel Co., Inc., in the United States, and the International Nickel Co. of Canada, Ltd., the Ontario Refining Co., Ltd., the International Sales, Ltd., the Mond Nickel Co., Ltd., of England, the Huronian Co., Ltd., the Canadian Nickel Products, Ltd., the Centre d'Information du Nickel of France, the great Canadian Pacific Railway, the largest bank in the United States (Chase National Bank of New York), the American Metal Co., Ltd., the Amalgamated Metal Corporation, Ltd., of England, the International General Electric Co., the Mutual Life Insurance Co., and the General Electric Co. of the United States.

There is submitted at the end of this report a list of the directors of the United States Steel Corporation with a list of their outside directorships,⁵ and where the data were available an effort has been made to show the amount of assets for which each director is responsible, including those of the United States Steel Corporation. This table shows that the 18 directors of the United States Steel Corporation, in addition to directing the affairs of this approximately three-billion-dollar corporation, are actually trying to direct the business fortunes of corporations with aggregated assets of more than \$30,000,000,000

⁵ See Appendix F.

For a number of years the Chase National Bank of New York City has been the largest bank in the United States, and probably the largest private bank in the world. When Mr. Albert Wiggin was the chief executive head of the Chase National Bank, he held at the same time 59 directorships in various public utility, industrial, insurance, banking, and holding corporations. When Mr. Wiggin was discredited by a Government investigation and forced to resign, his place was taken over by Mr. Winthrop W. Aldrich. In 1939 Mr. Aldrich, in addition to his position as chairman of the greatest bank in the United States, was president and director of the Chase Safe Deposit Co., was helping to direct the American Telephone & Telegraph Co., Rockefeller Center, Inc., the Westinghouse Electric & Manufacturing Co., the Westinghouse Electric International Co., the Discount Corporation of New York, the Rockefeller Foundation, the General Education Board, the Metropolitan Life Insurance Co., and the New York World's Fair.

In many corporations in America today, a board of directors ranging from 10 to 20 men is supposed to manage an enterprise, the size of which in itself seems to challenge competent administration, even if these gentlemen devoted every hour of their working day to its problems. In many cases, however, these directors are also directors of many other businesses at the same time.

Multiple directorships among directors of large corporations are undoubtedly very extensive in American business. The Commission has cited to the Temporary National Economic Committee only a few examples, because the Commission had neither the funds nor the time to submit to the committee more comprehensive material on this subject. Experts on the Commission's staff familiar with this problem expressed the opinion that many more examples could have been cited.

The Commission's limited investigation of this subject, however, disclosed the fact that multiple directorships are not confined exclusively to large corporations. Some of the medium-sized corporations in the 18 industries covered by the Commission's inquiry had directors and officers who were also directors and officers in numerous other businesses. Typical of these medium-sized corporations is the National Steel Corporation. This corporation was found to have 11 directors who also held 117 directorships or business connections in other enterprises. The directors of the National Steel Corporation, therefore, average more than 10 outside businesses per director. However, the total assets of all the businesses directed by the 11 directors of the National Steel Corporation, including those of the National Steel Corporation, amounted to only one and a half billion dollars.⁶

The theory that multiple directorships impair business efficiency appears to be most cogent in the case of corporations of extreme size. Such corporations, because of their hugeness, the complexity of their business activities, would seem to require the undivided attention of their officers and directors. The burden of outside business interests on the directors of medium-sized corporations generally appears to be less than in the case of directors of very large corporations for two reasons: First, the medium-sized corporations were invariably considerably smaller than the larger corporations, and consequently presented a much reduced problem of management. Secondly, the total business interests of the directors and officers of medium-sized

⁶ See Appendix G.

corporations were generally found to involve businesses whose aggregated assets were substantially smaller than the aggregated assets of the total business interests of officers and directors of large-sized corporations.

It should be remembered that the Commission, in citing multiple directorships as a possible cause of inefficiency in very large corporations, is only developing in a limited way a thesis advanced by many critics of very large size in American business. On the validity of such a theory the Commission expresses no opinion.

In 1913 the Congress ordered an inquiry to find out, if possible, whether directors in American business really direct. The Commission on Industrial Relations reported, in 1916:

Boards of directors are responsible in theory for, and would naturally be expected to maintain supervision over, every phase of the corporation's management. But as a matter of fact we know that such supervision is maintained only over the financial phase of the business, controlling the acquisition of money to operate the business and distributing the profits.

Upon the testimony of financiers representing as directors, hundreds of corporations, the typical director of large corporations is not only totally ignorant of the actual operations of such corporations, whose property he seldom, if ever, visits, but feels and exercises no responsibility for anything beyond the financial condition and the selection of the executive officials. Upon their own statements these directors know nothing and care nothing about the quality of the product, the condition and treatment of the workers from whose labor they derive their income, or the general efficient management of the business.⁷

⁷ Final report of the Commission on Industrial Relations, S. Doc. 415, 64th Cong., 1st sess. 1915-16, vol. 1, p. 27.

WHERE DOES RESPONSIBILITY FOR EFFICIENCY BEGIN IN GIANT CORPORATIONS?

If, according to this report, directors of large corporations know little or nothing about the technical side of the business, how can such directors select competent officers to run the organization? And if the officers are incompetent, how will they ever be discovered, if the directors know nothing about the business? Incompetency is not always to be measured by earnings. Many times in the business world a corporation may seemingly thrive, not because it is competitively efficient, but because it has financial contracts and economic power that command business. Consequently, though earnings might be satisfactory, a really competent manager might have made them far better by the elimination of inefficiency and waste. If boards of directors cannot be interested in efficient management because of too many outside interests, where does responsibility for efficient management begin in very large corporations? Does it begin with the president? If so, the problem of management becomes that much more difficult. Instead of 15 or 20 men directing the business in all its phases, there is placed upon the shoulders of 1 individual a task that is from 15 to 20 times greater. Yet, in spite of this, we find the presidents of very large corporations engaged in managing or directing many other outside businesses.

Reference has already been made to the multiple business interests of the presidents of United States Steel Corporation and the American Telephone & Telegraph Co. Two additional examples of presidents of extremely large corporations who are at the same time engaged in directing multiple other businesses are submitted.

Mr. H. Donald Campbell is president of the Chase National Bank of the city of New York today. The record shows Mr. Campbell also directing a smelting and refining company, three insurance companies, a motion-picture corporation, an indemnity company, and a coal company. Mr. Gordon S. Rentschler is president of the National City Bank of New York, the second largest bank in the United States, with assets running over \$2,000,000,000. The record shows Mr. Rentschler also directing a banking corporation, a machinery manufacturing corporation, another bank, the Discount Corporation of New York, two insurance companies, the National Cash Register Co. and the International Telephone & Telegraph Corporation.¹

¹ Submitted herewith as Appendix H is a list of the business enterprises with which Mr. Campbell and Mr. Rentschler are connected.

DIRECTORS WHO DO NOT DIRECT FINANCE

Not infrequently the public becomes acquainted with corporate directors who are unable to properly direct the financial policies of large corporations because of numerous outside interests. The substitution of worthless collateral by Mr. Kreuger in the portfolios of the International Match Co. will be long remembered. The committee may recall that Mr. Kreuger wanted \$50,000,000 worth of good bonds from the portfolios of the International Match Co. The substitute collateral offered by Mr. Kreuger consisted of an alleged Polish match concession and concessions from three other countries, unknown, but designated as X, Y, and Z. The valuation of the concessions was given as \$66,310,196. It turned out that the concessions were forgeries; but apparently useless forgeries, because the Mr. Durant, president of the corporation, didn't even ask to see them. When the public got the facts, there was a universal query as to what the directors of the International Match Co. were doing. It would seem that a substitution of collateral for \$50,000,000 of bonds in the portfolios of the International Match Co. should have been a matter of importance to the board of directors. Directors of the International Match Co. did not pass upon the matter at all. Mr. John T. Flynn, writing in the New Republic for May 25, 1932, commented:

Well, as for the directors, they are, save for one or two Swedish gentlemen, American businessmen of almost overpowering intelligence, the kind that "have made America what she is today" and I hope they're satisfied. But one wonders during what odd moments they are directing the International Match Co. Most of them are directors in so many corporations that it is difficult to understand how even such mighty fellows could really spare the time for even a few of them. Here they are, with the number of corporations of which each is a director:

Percy A. Rockefeller.....	51
S. F. Pryor.....	41
F. W. Allen.....	21
H. O. Havemeyer.....	17
John McHugh.....	17
F. L. Higginson.....	13
Donald Durant.....	8
A. H. Larkin.....	8
B. Tomlinson.....	5

Mr. Rockefeller, for instance, when not directing these various 51 corporations, devotes a good deal of time to operating in Wall Street, playing bear, and we know how that uses up one's mental energies. What are these fellows doing on this International Match board, and on all those others, for that matter? They are in reality making a thoroughgoing comedy out of American business. How will they explain—and how will the president of the International Match Co., Mr. Durant, explain—how Kreuger could remove \$50,000,000 worth of securities from their vaults on a simple request and substitute a handful of junk without their knowing it? Mr. Durant has testified that he accepted these alleged concessions from 3 countries without knowing what countries they were and without any scrap of evidence that they really existed.

* * * * *

To sum the matter up: We have in this unsavory mess one more beautiful example of our crowning American financial vices—holding-company abuses, directors who do not direct, worthless securities bought by trusting investors on the faith of so-called "big" bankers, "friendly" receiverships which result when the crash comes and the secrecy which cloaks big business and behind which all these costly practices are carried on.

MANAGERIAL RESPONSIBILITY IN GOVERNMENT

Businessmen often make Government their favorite example of inefficiency and waste. Yet Government has always adhered strictly to the idea that administrators should stick to one job and give that job their full attention. In a very few cases Government officials will be found to be serving on committees and boards in addition to the principal job which they have. But in such cases the boards and committees are for the purpose of coordinating governmental agencies which have a regulatory problem in common.

Critics of the multiple-directorship system in business often make the point that government in the United States has with only slight exception recognized and practiced a sounder theory of managerial responsibility. These critics say that if governmental Washington had been patterned along the lines of managerial practices prevailing in industry today, businessmen would have been the first to criticize the inefficiency of such a system.

If Congress had permitted to flourish a system of interlocking officials, so that one individual would be at the same time a member of several unrelated departments or commissions, common-sense public opinion would have immediately asked why such diverse regulatory businesses should have their management intermingled. Also, such critics say, common-sense public opinion would refuse to believe that any man would be sufficiently versatile to discharge his managerial responsibilities adequately if he were permitted to hold a number of Government offices, diverse in their regulatory functions, at the same time.

Could an official holding down four or five positions with Government agencies, entirely unrelated in their activities, justify himself by saying that in each of these numerous and diverse businesses he specialized in only a small part of his managerial responsibility; that his principal business was to appoint subordinates to really manage businesses about which on the technical side he knew practically nothing?

Critics of the system of multiple directorships in business frequently emphasize the query, "Why is it that in industry and commerce one job, even though it may be confronted with the task of efficiently managing many hundreds of millions of dollars, is not enough to take a man's full time, when in much smaller political entities, where political management with only a few million dollars to administer, is presumed by common-sense public opinion to have on its hands a job the efficient discharge of which will require its full and undivided attention?"

CRITICS OF THE SECOND MERGER MOVEMENT IN AMERICAN BUSINESS

From 1919 to 1926 occurred the second great period of mergers in American business.

The extent and pointedness of the criticisms of large size in business which came from business itself in this period are surprising. This criticism came from eminent lawyers who had had extensive experience with big business, economists who were close to the operations of big business, and big businessmen themselves. About 8 years before this second merger movement got under way, the Honorable Louis D. Brandeis, at that time a noted corporation lawyer, had recorded in print his belief that bigness in American business had become a "curse"—not only from the standpoint of the effect of this big business in repressing competition in our industrial life and in exercising a control over the direction and use of savings in the Nation, but particularly from the standpoint that such bigness was actually inefficient. In "Other People's Money," Mr. Brandeis wrote:

Bigness has been an important factor in the rise of the Money Trust: Big railroad systems, big industrial trusts, big public-service companies; and as instruments of these, big banks and big trust companies. J. P. Morgan & Co. (in their letter of defense to the Pujo committee) urge the needs of big business as the justification for financial concentration. They declare that what they euphemistically call "cooperation" is "simply a further result of the necessity for handling great transactions," that "the country obviously requires not only the larger individual banks, but demands also that those banks shall cooperate to perform efficiently the country's business," and that "a step backward along this line would mean a halt in industrial progress that would affect every wage-earner from the Atlantic to the Pacific." The phrase "great transactions" is used by the bankers apparently as meaning large corporate security issues.

Leading bankers have undoubtedly cooperated during the last 15 years in floating some very large security issues, as well as many small ones. But relatively few large issues were made necessary by great improvements undertaken or by industrial development. Improvements and development ordinarily proceed slowly. For them, even where the enterprise involves large expenditures, a series of smaller issues is usually more appropriate than single large ones. This is particularly true in the East where the building of new railroads has practically ceased. The "great" security issues in which bankers have cooperated were, with relatively few exceptions, made either for the purpose of effecting combinations or as a consequence of such combinations. Furthermore, the combinations which made necessary these large security issues or underwritings were, in most cases, either contrary to existing statute law, or contrary to laws recommended by the Interstate Commerce Commission, or contrary to the laws of business efficiency. So both the financial concentration and the combinations which they have served were, in the main, against the public interest. Size, we are told, is not a crime. But size may, at least, become noxious by reason of the means through which it was attained or the uses to which it is put. And it is size attained by combination, instead of natural growth, which has contributed so largely to our financial concentration.¹

At another point in his book, Mr. Brandeis says:

The American people have as little need of oligarchy in business as in politics. There are thousands of men in America who could have performed for the New Haven stockholders the task of one "who guides, superintends, governs, and

¹ "Other People's Money," Louis D. Brandeis, National Home Library edition, pp. 110, 111.

manages," better than did Mr. Morgan, Mr. Baker, and Mr. Rockefeller. For though possessing less native ability, even the average businessman would have done better than they, because working under proper conditions. There is great strength in serving with singleness of purpose one master only. There is great strength in having time to give to a business the attention which its difficult problems demand. And tens of thousands more Americans could be rendered competent to guide our important businesses. Liberty is the greatest developer. Herodotus tells us that while the tyrants ruled, the Athenians were no better fighters than their neighbors; but when freed, they immediately surpassed all others.²

All during the twenties, when thousands of corporations were disappearing through the processes of merger and combination, sharp criticism found its way into print from men who were intimately acquainted with business and its problems. Close on the heels of Mr. Brandeis, a distinguished metallurgist and public accountant who had intimately known many industries, sounded a warning about merger and combination in American business. Mr. Ernest Salisbury Suffern, writing in the *New York Times Analyst* for November 3, 1913, said in an article entitled "The Apparent Failure of Industrial Eugenics":

Knowledge and technical ability have given place to financial influence * * * We have learned that the limit of growth is soon reached at which a central control is effective * * *. The idea that centralization and combination always produce increased efficiency and profit is a bubble that has been sadly pricked.

A few years later, Mr. Archer Wall Douglass, who for many years served as chairman of the committee on statistics of the Chamber of Commerce of the United States, wrote in "The Handicaps of Big Business," in the *Times Analyst* for February 14, 1916:

Great consolidations are not the surest way to efficiency in production * * *. Mere size, especially if it be much extended, means vulnerability as well as strength * * *. The essential weakness of the large, extended organization is the failure to achieve, save in part, the very thing for which it is principally created; namely, the economies supposed to be brought about by concentration.

Mr. Suffern was passing judgment on the first great merger movement in American business. Mr. Douglass was speaking at a time when there were already signs on the horizon that another merger movement was on the way.

In 1926, in the middle of the second merger movement, a careful student of business, Prof. A. L. Bishop, of Yale University, writing in the *Analyst* for January 29, 1926, said:

The acceptance of this idea (that the larger the business unit the more profitable the enterprise) as a basic principle in business expansion, at least in the field of industry, is unsafe.

In 1929, at the very height of the second merger movement in American industry, Dr. Willard Thorp, a conservative student of business, later to be chief economist for Dun & Bradstreet and trustee of Associated Gas & Electric Co., wrote in "Recent Economic Changes in the United States," a report prepared for President Herbert Hoover by the National Bureau of Economic Research:

The present mergers are unlike those of the great combination period at the end of the nineteenth century. In the earlier instances the incentives were usually either the formation of a monopoly or profits of some promoter. The present mergers often appear to be quickly followed by new financing, thus implying that the desire for additional capital is an important motive. A further incentive, in

² "Other People's Money," Louis D. Brandeis, *National Forme Library* edition, pp. 141, 142.

certain industries, has come from modern marketing methods, in which the concern which is large enough to undertake national advertising has a definite advantage over its smaller rivals.

It has long been claimed that large-scale operation offered many potential economies. It is evident that the most efficient size at which an industrial plant may operate has increased greatly during recent years. However, as regards combinations among such plants, the facts are entirely inadequate. The few available do indicate that as often as not, these potential economies are more than offset by real losses in efficiency. Over against this fact is the probability that the large concerns are taking an increased share of the Nation's business * * * Again, we conclude that this larger share in the Nation's business is not owing to ability to produce at a lower cost, but to greater success in the field of marketing. An interesting side light on this development is the present status of the Sherman and Clayton Acts, which tend to encourage combinations, since the merged companies can adopt a uniform marketing policy which would be illegal if undertaken by independents.

Dr. Erwin H. Schell, professor of business management, wrote in the *Annals of the American Academy* for May 1930:

The horizontal merger has been held to offer marked advantages to production. * * * Results, however, have been somewhat disappointing.

Even the conservative *New York Times* commented editorially upon the consequences of the widespread mergers effected during the twenties, in the midsummer of 1930:

These mergers and expansion programs were expected to result in economies in operation and management, but in many instances the falling off in business showed a number of glaring inefficiencies.

Mr. Arthur Anderson, head of one of the largest accounting firms in the United States and a man intimately acquainted with the cost operations of business, wrote in the *New York Times* for August 24, 1930:

A large organization has much the same susceptibility to defective operation as has the small business, and in addition has substantial weaknesses peculiarly its own. * * * Properties may be added one after another too quickly * * * resulting in industrial indigestion.

In February of 1933 as eminent and conservative a financier as Owen D. Young stated definitely to a congressional committee that the basic reason for the collapse of the Insull utility empire was size too big for any man to manage competently. Said Mr. Young:

Great numbers of operating utilities with holding companies superimposed on the utilities, and holding companies superimposed on those holding companies, investment companies and affiliates, which made it, as I thought then and think now, impossible for any man, however able, really to grasp the situation. * * * But I say it is impossible for any man to grasp the situation of that vast structure.

Even in such a competitive industry as the automobile industry, Mr. Alfred P. Sloan of the General Motors Corporation spoke as follows to a meeting of the company's sales committee, held July 29, 1925:

General Motors should be more progressive in this and other directions. In practically all our activities we seem to suffer from the inertia resulting from our great size. It seems to be hard for us to get action when it comes to a matter of putting our ideas across. There are so many people involved and it requires such a tremendous effort to put something new into effect that a new idea is likely to be considered insignificant in comparison with the effort that it takes to put it across.

I can't help but feel that General Motors has missed a lot by reason of this inertia. You have no idea how many things come up for consideration in the technical committee and elsewhere that are discussed and agreed upon as to principle well in advance, but too frequently we fail to put the ideas into effect until

competition forces us to do so. Sometimes I am almost forced to the conclusion that General Motors is so large and its inertia so great that it is impossible for us to really be leaders.

Perhaps it would be safest for us to let the other fellow take the initiative and then be satisfied to follow him as best we can. It seems a pity, however, that with our resources and ability we can't be a little more aggressive.

In 1931 Mr. Melvin A. Traylor, president of the First National Bank of Chicago, and also of the First Union Trust & Savings Bank, wrote:

Every kind and character of combination and consolidation was made, regardless of economic advisability or the possibility of economies in management or increased profits therefrom. Little or no consideration was given to the nature of the businesses involved; in one instance, for example, soaps and candles were united. Such combinations and mergers were promoted and securities were sold on the theory that temporary earnings derived from a false demand would not only continue, but would forever increase. Furthermore, these securities were not sold to those in a position to buy, or who could buy for investment purposes, but rather to those less able to buy—to men and women fascinated by high-power salesmanship and an inborn desire to gamble for high profits. Was such financial leadership calculated to inspire confidence or make for an economic stability which insures social welfare? I am afraid not. But financial leadership did not stop there. It actively promoted the purchase of equity stocks and split its own unit of stock par, in order, it is said, to bring its market values within the reach of the small investor. Financial leaders organized and promoted so-called investment trusts to give the small investor a chance to profit from wise financial leadership, made foreign loans of speculative value, and, altogether, followed the procession obviously intent upon getting theirs while the getting was good.

* * * * *

Ambition, cupidity, and greed have dictated policies, and trouble has been the result.³

As noted an industrialist as James Farrell, president of the United States Steel Corporation, toward the end of the merger movement of the twenties, became alarmed at the march of size in American business, and declared openly to other steel masters that such size had become a danger.

In 1932 the president of a great university commented on the merger movement of the twenties. Dr. Ernest M. Hopkins, president of Dartmouth University, who had been connected with the Western Electric Co., the Curtis Publishing Co., the Filene Store, and the New England Telephone Co., and who was still a director in the Boston & Maine Railroad and a member of the Rockefeller Foundation, said, in a published statement to the press:

I used to look upon a bank as an institution that was interested in the well-being, the welfare, of its clients. One went to a banker for counsel. When one's factory, or shop, or mercantile, or industrial establishment was ill, one looked to the banker as to a physician. * * * But today, and for a number of years past, in this period of mergers and reorganizations, a great many of our banks have stood like harpies, watching until a client shows signs of illness, and then rushing in to force him into liquidation, into bankruptcy. The bank then takes a hand in reorganizing the concern, makes a profit out of the reorganization and puts some of its men on the new directorate.⁴

³ Quoted by Mr. Norman Haggood in his foreword to the National Home Library Foundation's edition of "Other People's Money" by the Honorable Louis D. Brandeis, at p. 34.

⁴ Quoted by Mr. Norman Haggood in his foreword to the National Home Library Foundation's edition of "Other People's Money" by the Honorable Louis D. Brandeis, at p. 30.

THE PROBLEM OF SIZE IN AMERICAN BUSINESS

Large-sized corporations in American industry present two fundamental economic problems. The first is the problem of whether such corporations are actually more efficient than small or medium-sized units in their industries. Even if such corporations are more efficient, there is still another problem to be considered. Is the greater efficiency of such corporations passed on to the consuming public in the form of lower prices as the result of free and fair competition? Or does such corporate size operate to suppress competition so that the efficiency achieved merely increases profits by widening the difference between costs and noncompetitive selling prices?

The Commission knows that in many fields of industry, even if large corporations are efficient, the benefits of their efficiency are not enjoyed by the consuming public, since the effect of such corporate size has been to enhance prices, without advantage to the consumer. Consequently, no matter how efficient large corporations in industry may be, if they operate to repress competition their size cannot be defended on the ground that it is in the public interest.

When free and fair competition prevails, business is under a constant spur to reduce costs through efficiency, and to share such savings with the public in the form of lower prices. The constant lowering of costs in industry and the sharing of such savings with consumers is the vital process in a capitalistic system whereby standards of living are improved through the production and distribution of more wealth and a maximum employment of labor is achieved.

On the other hand if very large corporations are actually less efficient than medium-sized or small corporations in American business, and if, in addition, the large size of such corporations enables them to suppress competition and thereby to frustrate the greater efficiency of medium-sized or small business, this size is indefensible from the standpoint of a sound and progressive capitalistic system. Under such conditions the effect of large size in business is to protect, conserve, and perpetuate inefficiency in business and to destroy capitalism.

APPENDIX A

STATEMENT PREPARED BY MYRON W. WATKINS¹

The object of this statement is to examine the relation of industrial consolidation to the general economy. This is the problem I have been asked to discuss. It implies certain limits upon the scope of the inquiry, and as it may be helpful in clarifying the nature of that problem, I propose at the outset to make those limitations explicit. First, we are not here concerned with either the structure or mode of functioning of banks and insurance companies, on the one hand, or of transportation and public utility systems, on the other. Agriculture is likewise outside our purview. What we are concerned with is the structural characteristics and mode of functioning of what is often called "trade and industry." This term applies to three fairly well demarked sectors of the current economy: Manufacture, distribution, and nonprofessional service (hotels and motion pictures, for example) outside of the group already excluded as public utilities.

Secondly, "industrial consolidation" is not synonymous with "business combination" or "economic concentration." Consolidation in industry connotes the possession by a single, unified group of a power to determine the vital managerial policies respecting output and prices in a particular sphere, such power resting upon a proprietary basis, directly or indirectly. It should be added at once, however, that the connection between ownership and control is more often indirect than direct. Those who exercise the control of big business units seldom own more than a small fraction of the property they administer. They are, above all, the beneficiaries of "absentee ownership." But whether through the device of proxy solicitation, of security disfranchisement, or pyramiding, of voting trust agreements, or otherwise, a given group gains control of the operations of one or a series of corporate enterprises, the power wielded has its basis in proprietary interests. On the other hand, the phrases "business combination" or "economic concentration" embrace a much wider range of developments in the organization of trade and industry. Specifically they include, in addition to industrial consolidation, the whole matter of trade agreements and all those ties and pressures which are traceable to the dependence of industry upon credit and the capital market. There is a popular belief that many influences of the latter sort are not only sinister but of a singularly compelling character and that they originate in Wall Street. There is no occasion here to discuss the validity of that impression. For the present statement is limited to a consideration of the relation of industrial consolidation to the general economy.

Finally, it may be noted by way of introduction that this last phrase denotes not a static thing, such as a given area, or a given institutional framework, of economic activity, but a dynamic process. What

¹ Prepared for the Temporary National Economic Committee, March 1940, this statement should be regarded as consisting solely of the opinions of the author.

we are primarily interested in, I take it, is not the relation of industrial consolidation to the competitive system, but its relation to the achievement of a tolerable solution of the economic problem. By that I understand such an allocation of resources among alternative lines of production, such a method of organizing and conducting productive operations, and such a distribution of the joint product as will yield in the long run the maximum returns in proportion to the efforts expended. There is no universal and perennial optimum "solution" for these three basic phases of the economic problem, of course. But the fundamental test of a tolerably satisfactory performance of each of these unescapable functions of an economic system is capacity for continuous adaptation. And the degree to which adaptation to constantly changing conditions (sources of "supply," technical methods, directions of demand) is facilitated is precisely the degree to which that much-abused term "economic equilibrium" is realized.

So much by way of introduction. Like Cleveland, we are confronted with a condition, not a theory. Industrial consolidation is a fact. It once was not a fact. Sixty years ago it was only a prospect. A century ago, aside possibly from a few patent monopolies, there was no single enterprise controlling the output, much less the distribution, and still less the price, of as much as 10 percent of any product manufactured in this country, I venture. Then came the railroads, steam and electric power, semiautomatic and automatic processing machinery, and, in their train, large-scale production. The number of productive enterprises in proportion to the aggregate output tended to decline. This tendency was not uniform, of course. In worsted manufacture, for example, it was more pronounced than in the carpet or stove industries. Nevertheless, though, by 1890 large-scale production had become characteristic of most established lines of manufacture, there were few industries, outside of a handful of early "trusts" (oil, sugar, whisky) in which any single enterprise was responsible for as much as 25 percent of the national production. The exceptions, besides those noted above, were in every case new industries, such as photographic equipment and cash registers.

Undoubtedly industrial consolidation had its initial impetus and first manifestation in the growth of large-scale production. But it is important to realize that this transformation of the structure of industry from local shops producing for a regional market to mechanized factories producing for a national market had been substantially accomplished before the birth of big business, in any proper sense of the term, around the turn of the century. Indeed, the constituent enterprises which went into the so-called trusts were, in the majority of cases, essentially family concerns, though they were already of a size sufficient to realize whatever technical advantages from large-scale output the existing state of technology afforded. The best evidence of this is that the managers of the trusts themselves were content to continue the scale of manufacture previously developed until such time as the progress of technology made available, in some instances, additional net advantages from increasing the size of individual plants. This was in practically every case a decade or more later, and in many cases to this day the scale of production, i. e., the size and rate of output of individual plants, has not mounted above the level attained when the consolidation occurred.

The main factors in the pre-war trust movement, which represents the second stage in the development of industrial consolidation, were not technical economies but financial and strategic advantages. The financial factor had many facets. It included along with promoter's profits and prospective underwriting fees some genuine economic advantages in the way of access to the capital market and a certain flexibility resulting from the diversification of corporate securities. But it is hard to escape the conclusion that the major "financial" advantage sought and secured by corporate consolidation was the opportunity afforded, through the dispersion of ownership interests and through the erection of intricate, pyramided, labyrinthine, corporate structures, for the manipulation of corporate funds, corporate policies and corporate accounts by "insiders," or irresponsible "outsiders," to their own enrichment and without regard to the interests of the enterprise, the workers, the stockholders, or, least of all, the consumers. It is difficult to escape that conclusion because the record of what has transpired in the actual course of events is so replete with evidence of utilization of the power thus conferred for the purposes indicated.

The strategic advantages afforded by consolidation were primarily related to the control of the markets either for raw materials or for products, or for both. In reference to raw-material markets, in some cases, as in those of sugar and tobacco, for example, the concentration of purchasing power and the scope of operations might yield a highly advantageous bargaining position. In others, as in the aluminum, nickel, asbestos, and iron and steel industries, the strategy of buying up essential raw-material sources might be pursued to greater advantage and with less restraint. But in all cases the leverage afforded upon product prices from the presence in the market of a formidable enterprise of overpowering size appears to have been a major desideratum in amalgamation.

The financial policies of many of the pre-war consolidations were so reckless and the utilization of their strategic position so ruthless, at the outset, that as is well-known there ensued a violent reaction both among investors and among the public generally. This found political expression in virile "trust busting" campaigns and represented a large element in the Progressive movement. Big Business was put on the defensive and eventually was constrained to temper its tactics. The viability of "the shorn lambs" could not safely be disregarded, it was found. Nevertheless, in the post-war decade the industrial consolidation movement was resumed with an accelerating tempo.

The methods, the sphere, and the objectives of the merger movement of the twenties all differed appreciably, however, from those of the two preceding stages in the development of industrial consolidation. It was a less spectacular, less cataclysmic, process. Piece-meal absorption of one competitor after another, but one at a time, was the rule, though there were exceptions. The sphere of consolidation was broader, embracing not only distribution proper, for example the chain-store development, but many "manufacturing" fields which might better be termed "processing and packaging" industries, such as dairy products, bread, groceries, and drugs. Conspicuous, too, were the consolidations in service trades: hotels, restaurants, movie theaters. All this is aside from the noteworthy development in the same direction in banking and public utilities, with which we are not here concerned.

An analysis of the factors proximately responsible for this third stage in the growth of industrial consolidation reveals the major influence of commercial, or distributive, considerations, in contrast to the technical factors in the first stage and the financial factors in the second stage. Take, for example, the Colgate-Palmolive-Peet merger in the soap industry. If this represented any change in the methods, scale, or location of production, it has not been disclosed and is not apparent. Nor were the flotation of securities and the manipulation of corporate finances evidently decisive factors leading to consolidation. This is not to say that exigencies and opportunities of the foregoing character may not have played some part in effecting the consolidation, much less to say that they were wholly absent in other instances, for example, the McKesson & Robbins case. But the main factor in the soap merger as in a large majority of post-war consolidations, appears to have been prospective advantages in distribution. Trade-marks and trade names could be more fully utilized. Advertising expenditures could be made to "go farther," or perhaps a better expression would be that their potential effect on sales could be more nearly realized. Wasteful duplication in selling forces and distributive facilities (warehouses and delivery equipment) could be reduced. Cross-freights could be minimized. I am not suggesting that strategic factors associated with a dominant position in the market have been ignored in the development of industrial consolidation latterly. I am contending that in some instances supplementary to these factors and in other instances largely independently of them, notably in the growth of chain-store systems, the opportunity to gain genuine distributive economies has given stimulus to expansion through absorption of competing enterprises.

In the perspective afforded by this brief survey of the development of industrial consolidation, it should be clear that big business, mergers, giant corporations, are not all black; nor are they all white. Not all are predatory; not all are prudential. Some represent a response to distressing exigencies; others to promising opportunities. We cannot ignore their differences. No more can we neglect the joint, collective, aggregate significance of the transformation wrought in the structure and mode of operation of the American economy by the development of enterprise units of such size and power.

What, then, has been the actual relation of industrial consolidation to the general economy? What has been the practical effect of big business? One cannot answer such questions without first inquiring from what standpoint they are asked. From the purely investment standpoint mergers may or may not, in general, have been "successful." But whether, by and large, they have been highly profitable, moderately successful, or consistently unprofitable, the answer can furnish little illumination upon the question of whether the net results from the public standpoint have been salutary.

I assume that the committee is primarily interested in an answer from the social standpoint. From that standpoint, an adverse judgment upon industrial consolidation, taking the movement as a whole, seems to me inescapable. If one considers the last two stages of this development apart from the first, that conclusion is reinforced. There are three features of the outcome of industrial consolidation upon which this adverse judgment preeminently rests. Briefly they are: The human or psychological, the mechanical or technological, and the cyclical or strictly "economic" results. There is time for only the

my judgment a closer scrutiny of the facts disproves such an interpretation. If adequate account is taken (a) of variations in profitability among industries, (b) of the varying effect of cyclical phenomena in different spheres, and (c), above all, of the incidence of inescapable risks attending the establishment of "going concerns," by the test of profits the consequences of merger are neutral.

After all, why should it be otherwise? Consolidation has developed as a spontaneous business phenomenon. Business is run for profits. The merger movement would not only have ebbed, it would have stayed at the ebb, a generation ago if "normal" profits had not been forthcoming. On the other hand, if it has been singularly "profitable" from the investment standpoint, there is little reason for supposing that it would not have proceeded much farther than it actually has. Certainly there was nothing in the anti-trust law "curb" as judicially interpreted since 1911, and especially since 1920, to have deterred such a development.

The above should not be taken as an assertion that there have been no lucrative gains, no "unearned increment," in the development of industrial consolidation. A reminder may not be out of place that the discussion related to the profitability of mergers "from the private investment standpoint." There are other ways, as numerous as they are subtle, to gain through or from mergers than by investing in them. Indeed, a study of the record of industrial consolidations will convince even the most skeptical, I am confident, that those who have made the real investments upon which they operate have been fortunate to fare no worse than they have. To cite only a single example, though it could be multiplied many times, when one member alone of the board of directors of one of the best known industrial consolidations can with the connivance of his associates divert corporate revenue in the amount of \$2,160,000 to his personal account as remuneration, not for capital invested but solely for "services rendered," in a single year in the depth of the worst depression in history, there is no occasion for surprise that the rate of profit on the "other people's money" actually invested in such enterprises should be no more than adequate to keep the "goose" on the nest. If this sort of thing may be done with impunity, as the Supreme Court itself has assured us it may—under corporation charters as now drafted and with corporate privileges as now granted—we have only ourselves to blame for such a perversion of the enterprise system.

The restoration of business enterprise to responsible control is the solution of the problem of industrial consolidation. Size, we have been told, is no offense. If irresponsible management were once ended, we should soon find it no less true that size is no defense—in competition with efficiency. There will be no occasion, then, to limit size arbitrarily. Size will limit itself—to a varying and ever-changing economic optimum. But the restoration of responsible control will not come by admonishing big business not to restrain trade. It will come only from a reconstruction of the corporate units of business enterprise themselves, a redefinition of the powers and privileges which a corporate franchise confers, and of the obligations it imposes. That means Federal incorporation.

MYRON W. WATKINS,
New York University.

APPENDIX B

STUDY OF PENNSYLVANIA-DIXIE CEMENT CORPORATION AND PREDECESSOR COMPANIES—THE MERGER AND ITS EFFECT ON OPERATIONS

INTRODUCTION

An investigation and study has been made of the records of the Pennsylvania-Dixie Cement Corporation from 1927 to 1938, inclusive, and of the records of four predecessor operating cement companies, for 5 years and 7 months prior to their consolidation, in 1926, to form the Pennsylvania-Dixie Cement Corporation, together with other data described below.

This investigation and study was authorized and directed by the Federal Trade Commission, acting as an agency for the Temporary National Economic Committee, in order to determine the purpose of the merger and what economies were hoped for and realized.

This report shows that the idea for the consolidation originated with a banking syndicate, headed by the National City Co. and Hemphill, Noyes & Co., which is reported to have approached the controlling stockholders of the Dixie Portland Cement Co., Clinchfield Portland Cement Co., Pennsylvania Cement Co., and the Dexter Portland Cement Co. and made them attractive offers for their properties. The acceptance of the offers enabled the syndicate to form the Pennsylvania-Dixie Cement Corporation and market its securities to the general public at a handsome profit to itself. In the process, the assets acquired by the new company were recorded at values approximately 100 percent in excess of the amounts at which they had been recorded on the books of the predecessor companies, and the public through its purchase of the securities of the Pennsylvania-Dixie Cement Corporation at inflated values have suffered heavy loss.

The study also demonstrates that no operating economies were achieved as the result of the consolidation. Furthermore it appears that the controlling stockholders of the various predecessor companies gave little consideration to the desire to achieve operating economies when the consolidation was being considered.

SOURCES OF DATA FOR REPORT

Several conferences were held with officials of the Pennsylvania-Dixie Cement Corporation at its New York offices in order to ascertain the location of records showing the results of the operations of the four cement companies which were combined, during 1926, to form Pennsylvania-Dixie Cement Corporation; and likewise the location of data showing the details of the operations of the latter company.

Officials of the Pennsylvania-Dixie Cement Corporation stated that their company was interested only in acquiring the assets of the predecessor companies, subject to the liabilities of said companies; and that the detailed operating records of the predecessor companies were not acquired by the corporation. Also that if such records are still in existence they are most likely scattered over a wide territory within the eastern portion of the United States, being located at or near the operating plants of the predecessor companies.

Records of the Pennsylvania-Dixie Cement Corporation showing summaries of the operations of the various plants acquired as above are kept at the general offices of the company in New York City. However, officials of the company stated that they were extremely busy preparing their defense in the matter of the complaint of the Federal Trade Commission against the cement companies, with year-end closings, and with various reports to Government agencies, such as the Securities and Exchange Commission. They stated further that much of the information was available, in the form desired by the committee, at the New York Stock Exchange and at the New York office of the Securities and Exchange Commission; and then requested that as much of the information as possible be obtained from such sources.

A search of the records of the New York Stock Exchange and those located at the New York office of the Securities and Exchange Commission necessitated obtaining further data directly from the company's records. After intimating, at an early conference, that it would not be necessary to subpoena any data which the company could furnish from its own files, counsel for the company subsequently requested a subpoena to cover material which had been assembled at the request of representatives of the committee. Accordingly, a subpoena was obtained and served upon the secretary of Pennsylvania-Dixie Cement Corporation to cover such material.

Data was obtained from the New York offices of Pennsylvania-Dixie Cement Corporation principally as follows: Balance sheets for each of the predecessor companies for the years 1921 to 1925, inclusive; income statements for each of the predecessor companies for the years 1921 to 1925, inclusive; statement of production and shipments of the predecessor companies for the years 1921 to 1925, inclusive; and for Pennsylvania-Dixie Cement Corporation for the years 1926 to 1938, inclusive; capacity figures for the latter company for the period 1926 to 1938, inclusive; statement of average number of office and sales department employees of the Pennsylvania-Dixie Cement Corporation for the years 1926 to 1938, inclusive; and copies of agreements between stockholders or their representatives, in negotiations for the predecessor companies with the National City Co. and Hemphill, Noyes & Co., relative to the sale of the assets of the predecessor companies to the Pennsylvania-Dixie Cement Corporation.

Briefly, data for this report were obtained from sources principally as follows:

(a) *Company's records.*—The data described in detail above, supplemented by explanatory information, was furnished by representatives of the Pennsylvania-Dixie Cement Corporation.

(b) *New York office, S. E. C.*—Financial statements of the predecessor companies for the years 1924, 1925, and the fiscal period January 1 to July 31, 1926, and financial data and other information

as contained in the annual reports of the Pennsylvania-Dixie Cement Corporation to its stockholders.

(c) *New York Stock Exchange*.—Statements filed with committee on stock list, required by the exchange for securities listed with it for sale. These statements showed authority for and purpose of issue for bonds, preferred and common stock issued by Pennsylvania-Dixie Cement Corporation, and also copies of the offering statements for each class of security.

(d) *Syndicate agreements* providing full details of the exchanges of Pennsylvania-Dixie Cement Corporation's securities for the assets and liabilities of the predecessor companies were not available at the New York offices of Pennsylvania-Dixie Cement Corporation. The syndicates which handled the above-mentioned securities were headed by the National City Co., which has since gone out of business, and Hemphill, Noyes & Co. A conference was held with Leo M. Blancke, a partner of Hemphill, Noyes & Co. Mr. Blancke furnished a copy of the syndicate's offer to cause the assets and businesses of the predecessor companies, subject to the liabilities, to be conveyed, transferred, and delivered to Pennsylvania-Dixie Cement Corporation. The details of such transfers are further described elsewhere herein.

(e) *Financial Journals; The Statistical Abstract; Minerals Yearbook; Commercial and Financial Chronicle; and the New York Times*.—Various supplemental data such as prices of products for the industry, total production; business trends, prices of securities, and market conditions were obtained from these sources.

HISTORY OF PREDECESSOR COMPANIES

The Pennsylvania-Dixie Cement Corporation was organized in Delaware, September 16, 1926, to acquire the assets, liabilities, and businesses of four cement companies. These four companies were the Dexter Portland Cement Co., the Dixie Portland Cement Co., the Pennsylvania Cement Co., and the Clinchfield Portland Cement Corporation. In addition to the assets and liabilities of the above companies, the Pennsylvania-Dixie received at the time of the consolidation through the sale of its securities approximately \$5,200,000 in cash, \$2,200,000 of which was used to retire bonds of the Dexter Portland Cement Co. and the remaining \$3,000,000 to be used for working capital.

The four predecessor cement companies were independent companies of similar size. The total assets of these companies, exclusive of goodwill, on July 31, 1926, less than 2 months before the completion of the consolidation, ranged from \$4,577,716 for the Dixie Portland Cement Co. to \$5,474,925 for the Dexter Portland Cement Co. These companies were also similar in respect to their lack of long-term debt. None of the companies during the 5 years prior to the consolidation possessed any appreciable amounts of borrowed funds. The principal exception to this lack of funded debt was a bond issue of \$2,200,000 floated by the Dexter Portland Cement Co. just a few months prior to the consolidation in connection with its acquisition of the Penn Allen Cement Co.

Although the consolidation in 1926 welded together four cement companies, five companies were really involved. In the latter part of 1925 the Dexter Portland Cement Co., one of the four companies, purchased the Penn Allen Cement Co. In terms of total assets, the

Dexter was somewhat larger than one and one-half times the size of the Penn Allen. However, the combined assets of both companies approximated the size of the other companies entering into the consolidation. In acquiring the assets, liabilities, and business of the Penn Allen, the Dexter paid, roughly, \$2,200,000, which was financed through the issuance of \$2,200,000 par value of bonds. This amounted to slightly less than \$800,000 in excess of the net book value of the Penn Allen. As the result of this consolidation, long-term debt of significant amount appeared for the first time in the capital structure of any of the five companies, subsequent to January 1, 1921, the beginning of the period covered by this study. The Pennsylvania Cement Co. had in 1923 rather heavy short term borrowing of over \$1,390,000 but this amount was reduced to less than \$370,000 the following year.

The four companies, consolidated to form the Penn-Dixie, operated seven plants, each a completely integrated producing unit, with large nearby reserves of high-grade raw materials. The following tabulation sets forth the location of these plants and their annual capacity. The plant formerly owned by the Penn Allen is shown as belonging to the Dexter Cement Co.

Company	Location	Annual capacity
(1) Dexter:		
Plant No. 1.....	Nazareth, Pa.....	1,300,000
Plant No. 2.....	do.....	1,200,000
(2) Pennsylvania:		
Plant No. 1.....	Bath, Pa.....	1,940,000
Plant No. 2.....	Portland Point, N. Y.....	1,060,000
(3) Dixie.....	Richard City, Tenn.....	2,000,000
(4) Clinchfield:		
Plant No. 1.....	Kingsport, Tenn.....	1,500,000
Plant No. 2.....	Clinchfield, Oa.....	1,100,000
		10,000,000

As the result of the absence of funded debt, the predecessor companies financed their expansion and development largely by the reinvestment of earnings, which were from time to time made part of permanent capital through the issuance of stock dividends. The data concerning these stock dividends are included in the further details of the predecessor companies which follow.

Dexter Portland Cement Co. was incorporated under the laws of Pennsylvania in 1899, with an authorized capital of 200 shares with a par value of \$50 per share. From this modest beginning, capital stock was increased from time to time, until as of July 31, 1926, the issued capital of this company consisted of the following: 40 shares of preferred stock and 49,640 shares of common stock, each with a par value of \$40 per share. In addition, the Dexter had \$2,200,000 par value 6 percent gold bonds outstanding arising from its acquisition of the Penn Allen Cement Co. in January 1926.

Originally the par value of the stock was \$50, but was reduced to \$40 per share in 1917 by a liquidating dividend of \$10 per share. During the period from 1899 to the end of 1905, in addition to common stock, the company issued 2,500 shares of preferred stock and \$300,000 principal amount of debenture bonds, both issues being convertible into common stock. These conversion privileges were later exercised to the extent of the entire amount of the preferred stock and

\$280,000 debentures, the balance of the bonds amounting to \$20,000 being retired for cash. The capitalization of the company was further increased by stock dividends paid on common-stock equivalent to 150 percent of the outstanding common stock in 1920, 50 percent in 1923, 33½ percent in 1925. .

On July 29, 1926, through its representative John A. Miller, the Dexter Co., entered into an agreement with a syndicate headed by the National City Co. and Hemphill, Noyes & Co. providing for its consolidation with three other cement companies to form Pennsylvania-Dixie Cement Corporation.

Pennsylvania Cement Co., was incorporated under the laws of Pennsylvania in 1899, with an authorized capital of 2,000 shares of common stock, each share of which had a par value of \$100. Capital stock was increased from time to time until 1922, when a 150-percent stock dividend further increased its outstanding stock to \$1,250,000. The outstanding stock of this company remained the same until July 26, 1926, when through certain of its stockholders it entered into an agreement with a syndicate headed by the National City Co., and Hemphill, Noyes & Co. looking to its consolidation with the three other cement companies, mentioned above, to form Pennsylvania-Dixie Cement Corporation. .

During 1918 the Pennsylvania Cement Co. leased a cement plant, located at Portland Point, N. Y., belonging to the Cayuga Operating Co., Inc., a New York corporation. This lease expired June 30, 1919, and at the expiration of the lease the plant was purchased by Pennsylvania Cement Co. In 1920 the power plant of the Cayuga Co., also located at Portland Point, was likewise purchased by the Pennsylvania Cement Co.

Dixie Portland Cement Co., was organized under the laws of West Virginia, in 1906. Originally its authorized capital stock was 11,000 shares of 7 percent cumulative preferred and 16,000 shares of common stock, each of \$100 per value.

During 1923 Dixie Portland Cement Co. issued a common-stock dividend amounting to 31 percent of its outstanding stock. The following year 1924 outstanding capital stock was further increased by the declaration of a common-stock dividend of 25 percent.

As of July 23, 1926, when this company entered into an agreement with the National City Co., and Hemphill, Noyes & Co., looking to its consolidation with the three other cement companies, named above, to form Pennsylvania-Dixie Cement Corporation, it had outstanding capital stock of 9,933 shares of 7 percent cumulative preferred and 24,950 shares of common stock, each with a par value of \$100 per share. At this time the Dixie Portland Cement Co., owned all of the common stock of the Dixie Sand & Gravel Co.

Clinchfield Portland Cement Corporation was organized under the laws of Virginia, in 1910, with an authorized capital of \$900,000. Common and preferred stock was issued at various times so that at July 24, 1926, when it entered into an agreement with the National City Co., and Hemphill, Noyes & Co., for the purpose of its consolidation with three other cement companies to form Pennsylvania-Dixie Cement Corporation, total capital stock amounted to \$2,657,000 consisting of 9,564 shares of 7 percent cumulative preferred and 17,006 shares of common stock, each class of stock having a par value of \$100 a share.

At the time it entered into the above indicated agreement the Clinchfield Portland Cement Corporation owned all of the stock of the Marcem Quarries Corporation, a concern with a capital of \$300,000. The entire output of the Marcem Quarries Corporation was shipped to the Kingsport Plant of the Clinchfield Portland Cement Corporation.

There are presented on the following pages income statements and balance sheets of the predecessor companies for 1921 to July 31, 1926, inclusive.

TABLE 1.—Summary of income and expenses of predecessor companies of Pennsylvania-Dixie Cement Corporation, 1921-July 31, 1926

YEAR—1921

	Clinchfield Portland Cement Cor- poration	Dexter Port- land Cement Co.	Pennsylvania Cement Co.	Dixie Port- land Cement Co.	Total
Net sales.....	\$1,882,477.67	\$1,640,967.62	\$2,329,461.48	\$2,085,315.02	\$7,938,221.79
Manufacturing costs:					
Purchased cement.....		213,811.95	16,797.56		230,609.51
Materials and supplies.....	757,843.50	452,687.29	608,424.09	273,335.22	2,092,280.10
Labor and salaries.....	245,960.08	194,007.77	303,538.81	473,044.78	1,216,552.04
Manufacturing expenses.....					
Coal.....	211,779.69		335,370.18	420,658.83	967,808.70
Electric power.....	45,383.35	92,030.64	661,843.34		799,257.33
Other.....					
Total.....	1,260,967.22	952,537.65	1,925,973.98	1,167,038.83	5,306,517.68
Inventory increase or decrease.....	154,278.24	19,833.02	1147,068.50	139,184.06	1,220,727.78
Manufacturing costs exclusive of depreciation and depletion.....	1,266,088.96	972,370.67	1,778,875.48	1,277,854.77	5,085,789.90
Depreciation and depletion.....	236,112.88	86,824.04	153,138.89	124,539.00	602,639.81
Selling expenses.....	62,705.90	130,983.16	187,123.22		380,817.28
Administrative expenses.....	75,493.94	135,711.21	101,092.23	168,707.64	481,005.02
Other deductions.....	74,020.27	8,089.32	93,639.83	381,205.98	556,955.40
Total operating expenses.....	1,655,021.97	1,333,983.40	2,315,894.65	1,802,307.39	7,107,207.41
Net operating income.....	227,455.70	306,984.22	13,566.83	283,007.63	831,014.38
Other income.....	19,253.21	13,172.06	41,318.66		73,743.93
Net income applicable to total investment ¹	246,708.91	320,156.28	54,885.49	283,007.63	904,758.31

• YEAR—1922

Net sales.....	\$1,857,278.79	\$1,379,626.53	\$3,227,272.18	\$2,363,634.53	\$8,827,812.03
Manufacturing costs:					
Purchased cement.....		148,151.16	188,877.00*		337,028.16
Materials and supplies.....	657,462.44	181,665.11	816,989.61	234,013.98	1,880,131.14
Labor and salaries.....	201,058.96	179,500.92	416,913.16	431,462.07	1,228,935.11
Manufacturing expenses.....					
Coal.....	177,706.63	360,506.80	535,121.98	415,875.59	1,489,211.00
Electric power.....	46,480.50	81,935.62	368,946.95		712,828.61
Other.....					497,363.07
Total.....	1,082,708.53	951,759.61	2,326,848.70	1,081,351.64	5,442,698.48

Inventory increase or decrease.....	16,562.45	117,079.97	107,453.35	113,120.62	220,056.45
Manufacturing costs exclusive of depreciation and depletion	1,099,270.98	934,679.64	2,434,302.05	1,194,473.26	5,662,724.93
Depreciation and depletion.....	118,389.19	88,599.01	189,087.30	124,108.28	520,273.81
Selling expenses.....	72,411.96	115,293.57	186,575.24	179,387.19	374,280.77
Administrative expenses.....	102,331.15	101,375.65	179,387.19	187,089.69	370,183.88
Other deductions.....	38,053.18	8,485.82	102,402.85	144,680.11	293,021.96
Total operating expenses.....	1,430,456.46	1,248,433.72	3,091,754.63	1,650,440.34	7,421,085.15
Net operating income.....	426,822.33	131,192.81	135,517.55	713,194.19	1,406,726.88
Other income.....	33,746.76	19,768.14	90,364.02	143,878.92	143,878.92
Net income applicable to total investment ¹	460,569.09	150,960.95	225,881.57	713,194.19	1,550,605.80

YEAR—1923

Net sales.....	\$2,311,313.10	\$1,670,037.35	\$4,055,838.91	\$2,491,240.43	\$10,528,429.79
Manufacturing costs:					
Purchased cement.....			143,292.42		143,292.42
Materials and supplies.....	721,817.23	184,320.23	875,942.45	246,570.84	2,028,650.75
Labor and salaries.....	234,135.12	240,359.38	511,713.81	493,459.87	1,479,668.18
Manufacturing expenses.....					
Coal.....		344,471.73		408,180.86	812,652.59
Electric power.....	219,694.07	51,701.08	498,508.75		718,202.82
Other.....		149,542.13	476,796.60		678,339.81
Total.....	1,227,347.50	918,943.47	2,506,254.03	1,208,211.57	5,860,806.57
Inventory increase or decrease.....	34,421.37	13,955.24	33,623.68	26,918.58	41,671.51
Manufacturing costs exclusive of depreciation and depletion	1,192,926.13	905,038.23	2,539,877.71	1,181,292.99	5,819,135.06
Depreciation and depletion.....	117,343.90	102,081.51	224,875.85	148,484.75	592,785.04
Selling expenses.....	73,579.57	131,647.40	181,591.95	184,470.46	386,818.90
Administrative expenses.....	128,551.98	161,309.51	184,470.46	232,432.31	706,754.26
Other deductions.....	23,028.13	9,214.64	144,293.87	164,781.91	341,318.55
Total operating expenses.....	1,535,429.71	1,309,291.32	3,275,109.82	1,726,991.96	7,816,822.81
Net operating income.....	775,883.39	360,746.03	780,729.09	764,248.47	2,681,606.98
Other income.....	38,043.17	13,394.73	92,678.81	144,116.71	144,116.71
Net income applicable to total investment.....	813,926.56	374,140.76	873,407.90	764,248.47	2,825,723.69
Less Federal income tax.....	102,488.16	46,681.03	114,753.71	112,691.44	376,614.34
Net income.....	711,438.40	327,459.73	758,654.19	651,557.03	2,449,109.35

¹ Denotes inventory increase.² Before Federal Income Tax—amounts not available.

TABLE 1.—Summary of income and expenses of predecessor companies of Pennsylvania-Dixie Cement Corporation, 1921-July 31, 1926—Con.

YEAR—1924

	Clinchfield Portland Cement Corporation	Dexter Portland Cement Co.	Penn Allen Cement Co.	Pennsylvania Cement Co.	Dixie Portland Cement Co.	Total
Net sales.....	\$2,412,373.83	\$2,151,157.92	\$1,726,861.14	\$4,434,855.44	\$2,465,206.43	\$13,190,454.76
Manufacturing costs:						
Purchased cement.....	63,077.22	39,593.60	138,663.08	42,173.35	345,146.71	283,507.25
Materials and supplies.....	700,312.10	230,596.08	231,386.99	923,347.23	212,729.97	2,208,402.12
Labor and salaries.....	216,227.42	268,890.60	578,894.82	613,031.88	410,480.58	1,572,266.86
Manufacturing expenses.....		305,295.02				578,894.82
Coal.....	215,794.93			332,874.87		548,669.80
Electric power.....	57,413.70	175,818.56	98,099.61	597,358.58	187,256.47	1,115,856.92
Other.....						
Total.....	1,291,825.37	1,020,193.86	1,046,954.50	2,508,785.91	1,155,613.73	7,023,373.37
Inventory increase or decrease.....	61,179.46	9,619.96	39,415.63	4,823.81	56,196.10	82,756.08
Manufacturing costs exclusive of depreciation and depletion.....						
Depreciation and depletion.....	1,353,004.83	1,029,813.82	1,007,538.87	2,503,962.10	1,211,809.83	7,106,129.45
Selling expenses.....	120,635.61	129,966.01	109,964.68	288,309.15	116,434.09	765,309.45
Administrative expenses.....	100,361.72	157,176.12	113,350.48	202,151.22	173,483.80	749,523.34
Other deductions.....	149,930.43	231,029.83	106,927.05	217,445.26	186,797.03	883,126.61
Total.....	66,449.09	20,331.97	25,759.67	102,240.07		211,783.80
Total operating expenses.....	1,781,381.69	1,568,320.75	1,363,540.75	3,314,107.80	1,691,524.66	9,718,875.65
Net operating income.....	630,992.14	582,837.17	363,320.39	1,199,747.64	773,681.77	3,471,579.11
Other income.....	47,622.71	9,810.32		83,295.67	28,126.69	170,855.39
Net income applicable to total investment.....	678,614.85	592,647.49	363,320.39	1,206,043.31	801,808.46	3,642,434.50
Less Federal income tax.....	85,736.45	72,115.33	46,501.47	157,726.87	97,148.97	459,529.09
Net income.....	592,878.40	520,532.16	316,818.92	1,048,316.44	704,659.49	3,182,905.41

YEAR—1925

Net sales.....	\$2,752,060.73	\$2,186,251.37	\$1,868,609.91	\$4,984,511.60	\$2,528,909.81	\$14,320,343.42
Manufacturing costs:						
Purchased cement.....	150,339.50	10,441.60		28,341.19		189,122.29
Material and supplies.....	899,045.86			961,153.71	345,540.88	2,205,740.45
Labor and salaries.....	375,646.70	207,586.89		674,777.02	358,984.43	1,616,995.04
Manufacturing expenses.....		738,532.58	1,047,030.23			1,785,562.81
Coal.....	214,739.99			113,667.50	391,885.08	391,885.08
Electric power.....	75,362.02	146,299.91		628,421.34	328,407.49	328,407.49
Other.....					177,040.09	1,027,123.36
Total.....	1,715,134.07	1,102,890.98	1,047,030.23	2,406,360.76	1,273,450.48	7,544,836.52
Inventory increase or decrease.....	1126,550.60	3,570.68		¹ 15,512.67	² 50,530.89	¹ 189,023.48
Manufacturing costs exclusive of depreciation and depletion.....	1,588,583.47	1,106,431.66	1,047,030.23	2,390,848.09	1,222,919.59	7,355,813.04
Depreciation and depletion.....	149,267.70		108,144.86	352,282.64	200,655.44	810,350.64
Selling expenses.....	115,182.21	162,072.57	³ 243,147.68	273,280.84	182,859.77	733,395.39
Administrative expenses.....	158,567.55	258,505.42		237,440.30	99,038.72	243,147.68
Other deductions.....	108,596.56	13,707.76	97,543.50	135,350.05		753,551.99
Total operating expenses.....	2,120,197.49	1,540,717.41	1,495,866.27	3,389,201.92	1,705,473.52	355,197.87
Net operating income.....	631,863.24	645,533.96	372,743.64	1,595,309.68	823,436.29	10,251,456.61
Corporate income tax.....	43,867.21	23,422.54	7,685.51	104,716.92	42,666.47	4,068,886.81
Net income applicable to total investment.....	675,730.45	668,956.50	380,429.15	1,700,026.60	102.76	4,291,245.46
Less Federal income tax.....	91,025.16	84,911.71	47,091.33	230,222.03	123,290.75	576,540.98
Net income.....	584,705.29	584,044.79	333,337.82	1,469,804.57	742,812.01	3,714,704.48

¹ Denotes inventory increase.² Before Federal income tax—amounts not available.³ Includes both selling and administrative expenses.

TABLE 1.—Summary of income and expenses of predecessor companies of Pennsylvania-Dixie Cement Corporation, 1921-July 31, 1926—Con.
JANUARY 1, 1926—JULY 31, 1926

	Glinchfield Portland Cement Cor- poration	Dexter Port- land Cement Co.	Pennsylvania Cement Co.	Dixie Port- land Cement Co.	Total
Net sales.....	\$2,070,262.51	\$2,238,222.19	\$2,516,484.30	\$1,523,739.22	\$8,340,708.22
Manufacturing costs:					
Purchased cement.....	(¹)	(¹)	(¹)	(¹)	(¹)
Material and supplies.....	(¹)	(¹)	(¹)	(¹)	(¹)
Labor and salaries.....	(¹)	(¹)	(¹)	(¹)	(¹)
Manufacturing expenses.....	(¹)	(¹)	(¹)	(¹)	(¹)
Coal.....	(¹)	(¹)	(¹)	(¹)	(¹)
Electric power.....	(¹)	(¹)	(¹)	(¹)	(¹)
Other.....	(¹)	(¹)	(¹)	(¹)	(¹)
Total.....	(¹)	(¹)	(¹)	(¹)	(¹)
Inventory increase or decrease.....	(¹)	(¹)	(¹)	(¹)	(¹)
Manufacturing costs exclusive of depreciation and depletion.....	1,092,522.31	1,100,865.62	1,149,429.13	711,679.46	4,054,496.52
Depreciation and depletion.....	143,754.82	139,567.50	198,698.82	114,448.50	596,469.64
Selling expenses.....					
Administrative expenses.....	² 177,861.99	² 243,754.34	² 306,483.08	² 181,626.26	² 909,725.67
Other deductions.....			² 2,012.50	² 399.24	² 4,411.74
Total operating expenses.....	1,414,139.12	1,484,187.46	1,656,623.52	1,010,153.46	5,565,103.57
Net operating income.....	656,123.39	746,034.73	859,860.77	513,585.76	2,775,604.65
Other income.....	17,313.06	18,962.54	33,975.73	69,549.60	139,800.93
Net income applicable to total investment.....	673,436.45	764,997.27	893,836.50	583,135.36	2,915,405.58
Less Federal income tax.....	89,200.00	92,200.00	115,308.90	89,608.71	386,317.61
Net income.....	584,236.45	672,797.27	778,527.60	493,526.65	2,529,087.97

¹ Includes both selling and administration expenses.

² Details not available.

TABLE 2.—Comparative balance sheets of predecessor companies of Pennsylvania-Dixie Cement Corporation, 1921–July 31, 1926

YEAR—1921

	Clinchfield Portland Cement Cor- poration	Dexter Port- land Cement Co.	Pennsylvania Cement Co.	Dixie Port- land Cement Co.	Total
Fixed assets:					
Land, buildings, machinery, and equipment	\$2,517,260.81	\$1,693,696.75	\$1,376,564.44	\$2,624,937.19	\$7,212,459.19
Less: Depreciation and depletion	670,780.49	963,603.31	694,857.88		2,329,241.68
Total fixed assets	1,846,480.32	730,093.44	681,706.56	2,624,937.19	5,883,217.51
Current assets:					
Inventories	351,383.03	427,918.15	538,096.20	335,035.72	1,652,433.10
All other current assets	217,158.98	318,233.90	698,993.81	266,472.34	1,500,859.03
Total current assets	568,542.01	746,152.05	1,237,090.01	601,508.06	3,153,292.13
Investments	333,080.00	36,279.47	186,504.45	417,664.65	973,498.57
Other assets (including deferred charges)	32,212.84		51,308.35	38,511.31	122,032.50
Total assets	2,780,285.17	1,512,524.96	2,156,609.37	3,682,621.21	10,132,040.71
Liabilities and net worth:					
Current liabilities	192,954.46	90,413.22	337,264.14	191,718.98	812,350.80
Bonded indebtedness			250,000.00		250,000.00
Other reserves	24,558.09	13,387.50	112,288.71	312,476.51	462,710.81
Total liabilities	217,512.55	103,800.72	699,552.85	504,195.49	1,525,061.61
Net worth:					
Capital stock:					
Preferred	1,000,000.00	3,040.00	355,600.00	1,024,200.00	2,382,840.00
Common	1,250,000.00	992,440.00	478,100.00	1,524,200.00	4,244,740.00
Surplus	312,772.62	413,244.24	623,356.52	630,025.72	1,979,399.10
Total net worth	2,562,772.62	1,408,724.24	1,457,056.52	3,178,425.72	8,606,979.10
Total liabilities and net worth	2,780,285.17	1,512,524.96	2,156,609.37	3,682,621.21	10,132,040.71

TABLE 2.—Comparative balance sheets of predecessor companies of Pennsylvania-Dixie Cement Corporation, 1921-July 31, 1926—Continued
YEAR—1922

	Clinchfield Portland Cement Cor- poration	Dexter Port- land Cement Co.	Pennsylvania Cement Co.	Dixie Port- land Cement Co.	Total
Fixed assets:					
Land, buildings, machinery, and equipment.....	\$2,440,155.02	\$2,069,263.91	\$1,430,205.77	\$2,567,468.08	\$8,507,092.78
Less: Depreciation and depletion.....	755,107.89	1,047,475.28	826,757.88	-----	2,629,341.05
Total fixed assets.....	1,685,047.13	1,021,788.63	603,447.89	2,567,468.08	5,877,751.73
Current assets:					
Inventories.....	283,857.68	392,900.76	354,680.14	251,654.36	1,283,092.94
All other current assets.....	618,352.46	160,929.79	1,124,494.95	645,965.22	2,549,702.42
Total current assets.....	902,210.14	553,830.55	1,479,135.09	897,619.58	3,832,795.36
Investments.....	333,050.00	12,867.09	133,546.74	441,117.82	920,581.65
Other assets (including deferred charges).....	26,957.89	-----	3,077.72	42,744.27	72,779.88
Total assets.....	2,947,265.16	1,588,486.27	2,219,207.44	3,948,949.75	10,703,908.62
Liabilities and net worth:					
Current liabilities.....	64,485.28	164,578.32	143,903.73	169,861.02	542,828.35
Bonded indebtedness.....	1,200.00	-----	188,000.00	-----	189,200.00
Other reserves.....	10,521.97	16,604.73	194,422.21	634,180.50	855,729.41
Miscellaneous liabilities.....	4,644.01	-----	-----	-----	4,644.01
Total liabilities.....	80,851.26	181,183.05	526,325.94	804,041.52	1,592,401.77
Net worth:					
Capital stock:					
Preferred.....	1,000,000.00	3,040.00	355,600.00	1,024,200.00	2,382,840.00
Common.....	1,750,000.00	992,440.00	1,250,000.00	1,524,200.00	5,516,640.00
Surplus.....	116,413.90	411,823.22	87,281.50	596,508.23	1,212,026.85
Total net worth.....	2,866,413.90	1,407,303.22	1,692,881.50	3,144,908.23	9,111,506.85
Total liabilities and net worth.....	2,947,265.16	1,588,486.27	2,219,207.44	3,948,949.75	10,703,908.62

YEAR—1923

Fixed assets:	\$2,600,927.25	\$2,505,550.87	\$3,755,025.65	\$2,574,865.33	\$11,436,369.10
Land, buildings, machinery, and equipment	857,958.40	1,146,079.48	1,557,705.60		3,561,743.48
Less: Depreciation and Depletion					
Total fixed assets	1,742,968.85	1,359,471.39	2,197,320.05	2,574,865.33	7,874,625.62
Current assets:					
Inventories	423,044.80	450,146.23	520,704.23	324,656.85	1,718,552.11
All other current assets	1,075,122.39	202,210.86	1,574,867.75	739,238.46	3,591,439.46
Total current assets	1,498,167.19	652,357.09	2,095,571.98	1,063,895.31	5,309,991.57
Investments	332,550.00	12,867.09	219,058.81	480,954.94	1,025,430.84
Other assets (including deferred charges)	70,318.33		6,994.80	43,414.72	120,727.85
Total assets	3,644,004.37	2,024,695.57	4,518,945.64	4,143,130.30	14,330,775.88
Liabilities and net worth:					
Current liabilities	30,893.60	321,357.50	246,989.94	116,896.85	776,137.89
Bonded indebtedness	80,800.00		1,394,808.45		1,475,608.45
Reserve for Federal income and profit taxes					
Other reserves		20,612.52	282,864.62	642,255.27	945,732.41
Miscellaneous liabilities	17,760.72		8,423.89		26,184.61
Total liabilities	189,454.32	341,970.02	1,933,086.90	759,152.12	3,223,663.36
Net worth:					
Capital stock:					
Preferred					
Common	1,000,000.00	3,040.00	355,600.00	1,024,200.00	2,382,840.00
Surplus	1,750,000.00	1,488,640.00	1,300,000.00	1,998,100.00	6,536,740.00
	704,550.05	191,045.55	930,258.74	361,678.18	2,187,532.52
Total net worth	3,454,550.05	1,682,725.55	2,585,858.74	3,383,978.18	11,107,112.52
Total liabilities and net worth	3,644,004.37	2,024,695.57	4,518,945.64	4,143,130.30	14,330,775.88

¹ Includes Cayuga Operating Co.

TABLE 2.—Comparative balance sheets of predecessor companies of *Pennsylvania-Dixie Cement Corporation*, 1921-July 31, 1926—Continued

YEAR—1924

	Clinchfield Portland Cement Cor- poration	Dexter Portland Cement Co.	Pennsylvania Cement Co.	Penn Allen Cement Co.	Dixie Portland Cement Co.	Total
	(²) (²)	(²) (²)	(²) (²)	(²) (²)	(²) (²)	(²) (²)
Fixed assets:						
Land, buildings, machinery, and equipment.....	\$3,208,152.94	\$1,481,282.96	\$2,904,758.01	\$1,223,577.55	\$2,720,185.16	\$11,537,956.62
Less: Depreciation and depletion.....						
Total fixed assets.....						
Current assets:						
Inventories.....	284,233.00	483,974.35	666,586.63	251,412.62	324,595.71	2,010,832.91
All other current assets.....	722,838.87	300,721.02	589,901.62	139,725.77	989,943.49	2,743,130.77
Total current assets.....	1,007,072.47	784,695.37	1,256,488.25	391,168.39	1,314,539.20	4,753,963.68
Investments.....	32,550.00	12,867.09	92,508.24		35,000.00	172,925.33
Other assets (including deferred charges).....	88,063.03	6,241.65	9,046.67	14,850.00	8,544.53	126,745.88
Total assets.....	4,335,838.44	2,285,087.07	4,262,801.17	1,629,595.94	4,078,268.89	16,591,591.51
Liabilities and net worth:						
Current liabilities.....	438,535.13	204,498.83	363,461.60	83,511.76	233,333.94	1,323,341.26
Bonded indebtedness.....			364,265.25	257,500.00		621,765.25
Reserve for Federal income and profit taxes.....	104,074.03	55,080.68	250,621.63	55,783.85	93,942.19	619,502.38
Other reserves.....	5,260.75					5,260.75
Miscellaneous liabilities.....				6,100.00		6,100.00
Total liabilities.....	607,869.91	259,579.51	978,348.48	402,895.61	327,276.13	2,575,969.64
Net worth:						
Capital stock:						
Preferred.....						
Common.....	1,000,000.00	3,040.00	355,600.00		1,024,200.00	2,382,840.00
Surplus.....	1,750,000.00	1,488,620.00	1,250,000.00	700,000.00	2,000,000.00	7,188,620.00
	977,968.53	533,847.56	1,678,822.69	526,700.33	726,792.76	4,444,161.87
Total net worth.....	3,727,968.53	2,025,507.56	3,284,452.69	1,226,700.33	3,750,992.76	14,015,621.87
Total liabilities and net worth.....	4,335,838.44	2,285,087.07	4,262,801.17	1,629,595.94	4,078,268.89	16,591,591.51

YEAR—1925

	(1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)
Fixed assets: Land, buildings, machinery, and equipment Less: Depreciation and depletion						
Total fixed assets.....	\$3,822,839.99	\$1,803,514.22	\$2,950,126.01	\$1,320,575.01	\$2,869,754.28	\$12,766,809.51
Goodwill—Excess cost of Penn Allen.....						
Current assets:						
Inventories.....	459,677.52	431,639.73	600,995.18	254,683.87	308,049.44	2,055,045.74
All other current assets.....	494,595.36	215,075.18	1,194,520.81	155,329.79	1,072,459.15	3,131,980.29
Total current assets.....	954,272.88	646,714.91	1,795,515.99	410,013.66	1,380,508.59	5,187,026.03
Investments.....	20,038.31	383,567.09	108,006.31		52,418.85	564,030.56
Other assets (including deferred charges).....	122,921.53	11,444.73	5,895.10	3,162.14	5,547.95	151,971.48
Total assets.....	4,920,072.71	2,845,240.95	4,859,543.41	1,733,750.81	4,311,229.70	18,669,937.58
Liabilities and net worth:						
Current liabilities:						
Bonded indebtedness.....	410,783.01	415,600.84	138,092.14	262,655.13	259,434.17	1,486,565.29
Reserve for Federal income and profit taxes.....	141,177.17	67,577.06	198,000.00			138,000.00
Other reserves.....	7,268.75		233,722.03	50,030.21	142,070.26	634,576.73
Miscellaneous liabilities.....						7,268.75
Total liabilities.....	559,228.93	483,177.90	569,814.17	312,685.34	401,504.43	2,326,410.77
Net worth:						
Capital stock:						
Preferred.....	1,000,000.00	1,000.00	108,900.00		1,019,900.00	2,130,400.00
Common.....	2,000,000.00	1,984,800.00	1,250,000.00	1,200,000.00	2,495,000.00	8,929,800.00
Surplus.....	1,360,843.78	375,663.05	2,930,829.24	221,065.47	394,825.27	5,285,226.81
Total net worth.....	4,360,843.78	2,362,063.05	4,289,729.24	1,421,065.47	3,909,725.27	16,343,426.81
Total liabilities and net worth.....	4,920,072.71	2,845,240.95	4,859,543.41	1,733,750.81	4,311,229.70	18,669,937.58

* Details not available.

TABLE 2.—Comparative balance sheets of predecessor companies of Pennsylvania-Dixie Cement Corporation, 1921-July 31, 1928—Continued
JAN. 1-JULY 31, 1928

	Clinchfield Portland Cement Cor- poration	Dexter Port- land Cement Co. 1	Pennsylvania Cement Co.	Dixie Port- land Cement Co.	Total
Fixed assets:					
Land, buildings, machinery, and equipment	(1)	(2)	(3)	(4)	(5)
Less: Depreciation and depletion	(3)	(3)	(3)	(3)	(3)
Total fixed assets	\$3,308,727.40	\$3,093,965.92	\$2,947,066.58	\$3,003,128.38	\$12,352,828.28
Goodwill—Excess cost of Penn Allen		797,379.11			797,379.11
Current assets:					
Inventories	610,111.79	653,791.92	749,849.04	439,213.67	2,452,967.32
All other current assets	1,147,511.13	909,969.41	1,347,387.29	1,056,341.46	4,461,209.29
Total current assets	1,757,622.92	1,563,761.33	2,097,237.23	1,495,555.13	6,914,176.61
Investments	14,500.00	100.00	61,500.00	44,000.00	120,100.00
Other assets (including deferred charges)	46,157.93	19,718.99	44,347.02	35,032.98	145,256.92
Total assets	5,127,008.25	5,474,925.35	5,150,090.83	4,577,716.49	20,329,740.92
Liabilities and net worth:					
Current liabilities	704,407.02	290,362.90	208,926.74	131,939.45	1,335,636.11
Bonded indebtedness		2,200,000.00			2,200,000.00
Reserve for Federal income and profit taxes		92,200.00	233,919.91	151,394.65	477,514.56
Other reserves	12,089.64		120,907.09	51,676.47	184,673.20
Miscellaneous liabilities					
Total liabilities	716,496.66	2,582,562.90	563,753.74	335,010.57	4,197,823.87
Net worth:					
Capital stock:					
Preferred	956,400.00	1,600.00		993,300.00	1,951,300.00
Common	1,700,633.46	1,985,600.00	1,250,000.00	2,495,000.00	7,431,233.46
Surplus	1,753,478.13	905,162.45	3,336,337.09	764,405.92	6,749,383.59
Total net worth	4,410,511.59	2,892,362.45	4,586,337.09	4,242,705.92	16,131,917.05
Total liabilities and net worth	5,127,008.25	5,474,925.35	5,150,090.83	4,577,716.49	20,329,740.92

1 Includes Penn Allen Cement Co.

2 Details not available.

THE CONSOLIDATION OF PREDECESSOR COMPANIES TO FORM PENNSYLVANIA-DIXIE CEMENT CORPORATION

During July 1926, a syndicate headed by the National City Co. and Hemphill, Noyes & Co., investment bankers, entered into separate agreements with four independent operating cement companies for the purpose of combining these companies into one large consolidated company. The seven plants of these four cement companies were well integrated units, scattered along the eastern and southern regions from New York to Georgia. The consolidation was primarily directed to the consolidation of the capital structures of the four cement companies. In this type of horizontal grouping of companies economies resulting from integration of personnel and productive facilities are limited.

The agreements between the syndicate and the representatives of the common stockholders of the constituent cement companies provided that the syndicate would use its best efforts to cause a consolidated corporation to be organized for the purpose of acquiring the assets, liabilities, and businesses of the constituent companies. The names of the constituent companies and the dates on which agreements with the syndicate were entered into are as follows:

Date of agreement and names of constituent companies:

July 23, 1926: Dixie Portland Cement Co.

July 24, 1926: Clinchfield Portland Cement Corporation.

July 26, 1926: Pennsylvania Cement Co.

July 29, 1926: Dexter Portland Cement Co.

The agreements further provided that, if consummated, securities of the proposed consolidated company would be given as consideration for the net assets of the predecessor companies. The new company was to have a capitalization of \$13,000,000 par value of bonds, \$13,000,000 of preferred stock with a par value of \$100 a share, and 400,000 shares of common stock having no par value. The greater part of these securities of the new company were offered as consideration for the acquisition of the predecessor companies and were as follows:

Name of predecessor companies	Securities of proposed consolidated company to be issued as consideration		
	Stock		Bonds—principal amount
	Common, shares	Preferred, shares	
Dixie Portland Cement Co.....	59,533.33	26,790.00	\$2,679,000.00
Clinchfield Portland Cement Corporation.....	51,111.11	25,875.00	2,875,000.00
Pennsylvania Cement Co.....	98,888.88	34,904.01	3,703,703.70
Dexter Portland Cement Co.....	38,272.00	17,224.40	1,722,240.00
	237,805.32	104,791.41	10,979,943.70

According to these agreements, the syndicate offered to purchase back from the common stockholders of the predecessor companies all of the above securities of the Pennsylvania-Dixie Cement Corporation. Terms offered the Dixie, Clinchfield, and Dexter stockholders were identical, in that the syndicate agreed to pay these stockholders cash equal to the par value of the bonds and preferred stock, and \$45

a share for the common stock of the Pennsylvania-Dixie Cement Corporation. Less favorable terms were granted the stockholders of the Pennsylvania Cement Co. Such stockholders were to receive for their Penn-Dixie securities, \$90 for each \$100 par value of bonds, \$95.50 for each par value of preferred stock, and \$37.50 for each share of common stock. Under this provision of the agreements the stockholders of the predecessor companies were to receive the following amounts of cash for their Pennsylvania-Dixie Cement Corporation securities:

Predecessor companies:

	<i>Cash</i>
Dixie.....	\$8, 036, 985
Clinchfield.....	7, 762, 495
Pennsylvania.....	10, 000, 000
Dexter.....	5, 166, 720
Total.....	30, 966, 200

The securities to be acquired by the syndicate for cash were to be distributed to the general public. To reduce the amount of securities to be distributed, the syndicate offered to the stockholders of the predecessor companies a bonus as an inducement to retain the securities which were received by them under the agreements. Terms of the bonus varied slightly between the various predecessor companies, though in general the syndicate agreed to give to the stockholders one-ninth share of preferred stock for each share of preferred stock, and one-fifth share of common stock for each share of common stock retained by them.

However, stockholders retaining the securities of the new company and accepting the bonus were required as consideration on their part to agree, among other conditions, not to dispose of any of such securities for a period of 6 months from date of acceptance of the offer. This clause was simply to protect the syndicate in its distribution of the securities to the general public.

Having concluded agreements with the companies entering into the consolidation, the syndicate completed arrangements contemplated in the above agreements with the newly formed Pennsylvania-Dixie Cement Corporation. The syndicate made an offer, dated September 18, 1926, to the Pennsylvania-Dixie Cement Corporation which carried out and supplemented the terms of the previously mentioned agreements with the predecessor companies. Penn-Dixie accepted the offer on the same day, September 18, 1926. The agreement provided that the syndicate in addition to causing the assets of the predecessor companies, subject to their liabilities, to be conveyed to the Pennsylvania-Dixie Cement Corporation was to pay cash in the amount of \$5,256,728.65 to the Penn-Dixie for use as working capital and to retire \$2,200,000 principal amount of bonds of the Dexter Portland Cement Co. This cash payment was composed of two separate sums. The principal sum resulted from the purchase by the syndicate of 112,000 shares of common stock at \$35 a share, which amounted to \$3,920,000. The remaining cash payment of \$1,336,728.65 represented a consideration by the syndicate in addition to its services, for the securities which the syndicate received from the Pennsylvania-Dixie Cement Corporation.

Before estimating the profits to the syndicate, let us see what the stockholders of the predecessor companies received for their net assets. The amount of bonds received by the stockholders of two

of the companies, the Dixie and the Clinchfield, was \$2,336,151.77 less than originally agreed as the result of the operation of a conditional provision in the agreements with the predecessor company's stockholders. This provided that should any of the companies retire any of their preferred stock prior to the transfer of their assets and liabilities to the new company, the amount of bonds to be issued as consideration to the common stockholders of such companies would be reduced by an amount equal to the par value of the securities retired. The Dixie Portland Cement Co. retired 10,242 shares of its preferred stock with a par value of \$100 a share, which accounted for the net decrease of \$1,024,200 of bonds which it received. The decrease of \$1,311,951.77 in amount of bonds received by the Clinchfield Portland Cement Corporation was accounted for by the retirement of 12,840 shares of its preferred stock. The remaining \$27,951.77 represents minor adjustments concerning current asset position provided for in the original agreement with the syndicate. Although not confirmed, it appears that the moneys to effect the retirement of preferred stock were advanced by the syndicate, since the bonds intended for the Dixie and the Clinchfield stockholders were turned over to the bankers. In all other respects, the securities to be given the stockholders of the predecessor companies under the agreement of September 18, 1926, remained identical with the amounts to be received by the stockholders under their original agreements with the syndicate.

While accurate determination of the profits of the syndicate is lacking, it appears from records available to the committee that gross profits to the syndicate amounted very close to \$5,400,000. Firms and persons assisting in the distribution of the securities of the Penn-Dixie to the general public shared in the division of this sum. However, all expenses incident to the consolidation such as fees of the accountants, lawyers, and engineers were not met from these gross profits. Contracts between the syndicate and the stockholders of the predecessor companies and with the Penn-Dixie provided that all such expenses should be borne by Penn-Dixie. An officer of Penn-Dixie stated that these expenses were in the neighborhood of \$300,000.

The records indicate that the syndicate marketed all of the bonds and preferred stock of the Penn-Dixie. They also distributed 300,000 shares of the common stock. It appears that the remaining 100,000 shares of common stock went to the stockholders of the predecessor companies. Acting under one of the clauses in their contracts with the syndicate, these stockholders retained 80,000 shares of common stock received as part of the consideration for the transfer of the assets and liabilities of their companies to the Penn-Dixie. As the result of the retention of these securities by the stockholders, the syndicate was required to give them as a bonus for their action 20,000 shares of common stock of the Penn-Dixie.

The following table 3 presents in summary form, the receipts, costs, and gross profits to the syndicate in the acquisition and distribution of the securities of the Pennsylvania-Dixie Cement Corporation.

TABLE 3.—*Receipts, costs, and gross profit to the syndicate in the acquisition and distribution of securities of the Pennsylvania-Dixie Cement Corporation*

RECEIPTS FROM SALE OF PENN-DIXIE SECURITIES

Security	Par value or number of shares	Price	Cash receipts
Common stock (shares).....	300,000	\$43.00	\$12,900,000
Preferred stock.....	\$13,000,000	99.00	12,870,000
Bonds.....	\$13,000,000	99.50	12,935,000
			<u>38,705,000</u>

COST TO SYNDICATE TO ACQUIRE PENN-DIXIE SECURITIES

Cash payments to Penn-Dixie: ¹			
Purchase from company of 112,000 shares of common stock at \$35 a share.	\$3,920,000.00		
Cash payment under terms of agreement with company.....	1,336,728.65		\$5,256,728.65
Advances for retirement of preferred stock:			
To Dixie Portland Cement Co.....	1,024,200.00		
To Clinchfield Portland Cement Co.....	1,311,951.77		2,336,151.77
Cash payments to stockholders of predecessor companies for: ²			
Common stock at \$45 a share.....	7,101,239.40		
Preferred stock.....	10,322,073.00		
Bonds.....	8,273,421.23		25,696,733.63
			<u>33,289,614.00</u>

Gross profit to syndicate (subject to distributing expenses)..... 5,425,386.00

¹ For use as working capital, and to retire \$2,200,000 principal amount of Dexter Portland Cement Co. bonds.

² Represents highest possible cost to syndicate to acquire 157,805.32 shares. It is quite possible that a number of these shares were purchased by the syndicate at \$37.50 a share.

The banking or promoting syndicate of the National City Co., and Hemphill, Noyes & Co., called in other bankers to assist in the distribution of the securities of the Pennsylvania-Dixie Cement Corporation. Three separate underwriting syndicates were formed to distribute the three classes of Penn-Dixie securities. The composition of these syndicates was practically the same. The National City Co. and Hemphill, Noyes & Co. headed both the preferred stock and bond syndicates. Other bankers participating were Hornblower & Weeks, Cassatt & Co., Rogers, Caldwell & Co., Mitchell, Hutchins & Co., and Bond, Goodwin & Tucker, Inc. All of the above banking firms participated in the common stock syndicate with the exception of the National City Co. This syndicate was headed by Lehman Bros.

Copies of the agreements between the syndicate and the stockholders of the predecessor companies and between the syndicate and the Pennsylvania-Dixie Cement Corporation are contained in the appendixes No. 1 to No. 5, inclusive.

INTANGIBLES

In the process of consolidation of the Pennsylvania-Dixie Cement Corporation in September 1926, almost \$13,000,000 of intangible value was brought on the books of the new company. This represented an increase of approximately 100 percent in the value of the fixed assets of the new company over the value of the same assets as recorded on the books of the predecessor companies. Ford, Bacon & Davis, Inc., appraisal engineers; engaged by the banking syndicate of the National City Co. and Hemphill, Noyes & Co. to examine and appraise the properties involved in the proposed consolidation, re-

ported that the reproduction value of these properties exceeded their book value by almost \$13,000,000. The net book value of these fixed assets prior to the consolidation was close to \$13,000,000; after the consolidation their net book value was approximately \$26,000,000. In connection with this revaluation, it should be added that the Pennsylvania-Dixie Cement Corporation stated in information submitted to the stock list committee of the New York Stock Exchange in December 1926, that the commercial value of these same properties had been appraised at \$34,762,000.

The entire amount of the intangible value created at the formation of the Pennsylvania-Dixie Cement Corporation has been since written off. Table 4, which follows, sets forth the manner in which this has been accomplished.

TABLE 4.—*Intangible value included in the accounts of the Pennsylvania-Dixie Cement Corporation and the manner in which such value was written off*

Year	Intangible value at beginning of year	Write-offs of intangibles accomplished by charges			Total—sum of columns 3, 4, 5	Intangible value at end of year
		Against income ¹	Against special reserve of surplus ²	Against capital surplus principally created by reduction in value of preferred stock		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1926 ¹	\$12,917,799.61	\$38,292			\$38,292.00	\$12,879,507.61
1927	12,879,507.61	131,469	\$89,136.99		220,605.99	12,658,901.62
1928	12,658,901.62	106,016	282,706.86		388,722.86	12,270,178.76
1929	12,270,178.76	84,534	101,840.11		186,374.11	12,083,804.65
1930	12,083,804.65	132,379	8,565.58		140,944.58	11,942,860.07
1931	11,942,860.07	168,499	12,908.26		181,407.26	11,761,452.81
1932	11,761,452.81	259,838	4,842.20		264,680.20	11,496,772.61
1933	11,496,772.61	380,124			380,124.00	11,116,648.61
1934	11,116,648.61				469,282.00	10,647,366.61
1935	10,647,366.61	561,499			561,499.00	10,085,867.61
1936	10,085,867.61	686,560			686,560.00	9,399,307.61
1937	9,399,307.61			\$9,399,307.61	9,399,307.61	
Total		3,018,492	500,000.00	9,399,307.61	12,917,799.61	

¹ Sept. 23, 1926, to Dec. 31, 1926.

² These charges against income included in charges for depreciation.

It will be noted that of the \$12,917,799.61 of intangible value originally present in the accounts, \$3,018,492 was written off by charges against income in the form of depreciation and depletion allowances. That is, the amounts shown in column 3 represent the difference between the annual depreciation charges computed on a book basis and such charges computed on a cost basis.

The remaining \$9,899,307.61 was written off against capital accounts. At the end of 1927 a special surplus reserve of \$500,000 for property betterments and improvements was created. Against this reserve were charged certain units of the company's manufacturing equipment and property which were abandoned or had become obsolete, the value of which had not been completely amortized by annual depreciation charges.

In 1937 the company concluded that the intangible value, the bulk of which yet remained, should be eliminated from their records. To accomplish this, the value of its 7 percent cumulative preferred stock was reduced from a par value of \$100 a share to a stated value of \$25

a share. This resulted in the creation of a capital surplus of \$9,090,000. This amount, together with \$309,307.61 of surplus was applied against the intangible values contained in the fixed assets.

In addition to the \$13,000,000 of intangible value arising at the time of the formation of the Pennsylvania-Dixie Cement Corporation in 1926, one of the predecessor companies, the Dexter Portland Cement Co., listed as one of its assets, goodwill, amounting to \$797,379.11, This occurred as the result of the acquisition of the Penn Allen Cement Co. in January 1926, by the Dexter Portland Cement Co., the cost of the Penn Allen being in excess of its book value by this amount.

RATES OF RETURN ON INVESTMENT

Having considered the history and consolidation of the predecessor companies to form the Pennsylvania-Dixie Cement Corporation, attention is now given to the success of that consolidation as measured by earnings on investment. In determining the success of any business the amount of profit must be related to the capital employed in the production of the profit. Many factors influence the rate of profit, but all must operate or be expressed through the rate of profit. Over the years, the rate of return on investment provides the most critical test for judging the efficiency of a business enterprise. Table 5, which follows, presents the rates of return for the Pennsylvania-Dixie Cement Corporation for the years 1927-38 and for the predecessor companies as a group for the years 1921-25.

Rates of return were computed on the total investment and on stockholders' investment before deducting provisions for the payment of Federal income and profits taxes from earnings and after deducting appreciation from investment. The total investment consists of common and preferred stock, surplus, surplus reserves, reserves for Federal income and profit taxes, and long-term debt. The stockholders' investment consists of the foregoing with the exception of long-term debt. In computing the rates of return the investments were averaged as of the beginning and end of the year.

TABLE 5.—Rates of return on investment¹ for Pennsylvania-Dixie Cement Corporation, 1927-38, and for predecessor companies as a group, 1921 to July 31, 1926

	Average 1927-38	1938	1937	1936	1935	1934	1933	1932	1931	1930
Capital stock:										
Preferred.....		\$3,030,000.00	\$3,030,000.00	\$12,120,000.00	\$12,120,000.00	\$12,120,000.00	\$12,120,000.00	\$12,500,000.00	\$13,098,800.00	\$13,588,800.00
Common.....		400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	4,000,000.00	4,000,000.00	4,000,000.00
Surplus ²		951,935.85	951,935.85	1,261,243.46	1,464,862.99	2,183,552.39	2,838,170.68	515,846.75	1,551,306.62	2,598,061.73
Capital.....		182,821.52	52,827.54							17,750.46
Earned.....										
Surplus reserves.....										
Reserves for Federal income and profits taxes.....										
Total.....		4,564,757.37	4,434,763.39	13,781,243.46	13,984,862.99	14,703,552.39	15,358,406.88	17,015,846.75	18,676,750.13	20,383,571.18
Less appreciation.....				9,399,307.61	10,085,867.61	10,647,366.61	11,116,185.61	11,496,772.61	11,761,452.81	11,942,860.07
Stockholders' investment.....		4,564,757.37	4,434,763.39	4,381,935.85	3,898,995.38	4,056,185.78	4,242,120.07	5,519,074.14	6,915,297.32	8,440,711.11
Funded debt.....		7,167,000.00	7,476,000.00	8,283,000.00	8,634,000.00	9,242,000.00	9,557,300.00	9,655,000.00	10,123,000.00	10,742,500.00
Total investment.....		11,731,757.37	11,910,763.39	12,669,935.85	12,532,995.38	13,298,185.78	13,799,420.07	15,174,074.14	17,038,297.32	19,183,211.11
Average of stockholders' investment.....	\$5,916,065.12									
Average of total investment, intangibles eliminated.....	15,870,865.18	4,499,700.38	4,408,349.62	4,140,465.61	3,977,590.58	4,149,213.92	4,880,38.10	6,217,185.73	7,678,004.21	8,003,474.12
Percentage of total investment, including intangibles.....	28,142,212.93	11,821,290.38	12,290,349.62	12,601,465.61	12,915,590.58	13,548,713.92	14,486,18.10	16,106,185.73	18,110,754.21	19,156,724.12
Net income ³ applicable to stockholders' investment.....	122,857.61	132,716.48	41,632.54	533,990.91	325,381.35	322,637.69	31,294.61	31,006,392.90	31,000,006.77	824,324.09
Add interest on funded debt.....		438,466.39	477,956.64	513,039.32	535,743.98	563,976.18	577,018.84	590,005.73	628,012.62	669,376.42
Net income applicable to total investment.....	721,639.64	571,182.87	519,589.18	1,047,030.23	300,362.63	341,338.49	371,753.88	31,016,387.17	3561,994.15	1,493,700.51
Rate of return applicable to stockholders' investment.....	Percent 2.08	Percent 2.95	Percent 0.94	Percent 12.90	Percent 3.92	Percent 5.37	Percent 3.53	Percent 25.84	Percent 15.50	Percent 10.30
Rate of return applicable to total investment.....										
Intangibles eliminated.....	4.55	4.83	4.23	8.31	2.33	2.62	3.95	3.631	3.10	7.80
Intangibles included.....	2.56			4.69	1.29	1.40	1.78	3.66	1.88	4.79

¹ Returns were computed on average of investments at beginning and end of year.² Not segregated prior to 1937; for details of surplus see table 7.³ Denotes loss.

TABLE 5.—Rates of return on investment for Pennsylvania-Dixie Cement Corporation, 1927-38, and for predecessor companies as a group, 1921 to July 31, 1926—Continued

	1929	1928	1927	Predecessor companies					1922	1921
				Average, 1921 to July 31, 1927	7 months ended July 31, 1926	1925	1924	1923		
Capital stock:										
Preferred.....	\$13,588,800.00	\$13,588,800.00	\$13,000,000.00		\$1,951,300.00	\$2,130,400.00	\$2,352,840.00	\$2,382,840.00	\$2,382,840.00	\$2,382,840.00
Common.....	4,000,000.00	4,000,000.00	4,000,000.00		7,431,233.00	8,929,800.00	7,188,620.00	6,536,740.00	5,516,640.00	4,244,740.00
Surplus.....	1,936,153.27	2,315,464.32	2,256,700.34		6,749,384.00	5,283,226.81	4,441,161.87	2,187,532.62	1,212,026.85	1,979,399.10
Surplus reserves.....	26,316.04	128,156.15	500,000.00		184,673.00	7,268.75	5,290.75	945,732.41	855,729.41	462,710.81
Reserves for Federal income and profits taxes.....	98,767.48	283,900.64	374,746.77		477,515.00	634,576.73	619,502.38			
Total.....	19,650,041.79	20,316,321.11	20,131,447.11		16,794,105.00	16,985,272.29	14,640,385.00	12,052,811.81	9,967,236.26	9,069,689.91
Less appreciation.....	12,083,804.65	12,270,178.76	12,658,901.62							
Funded debt.....	7,566,237.14	8,046,142.35	7,472,545.49		16,704,105.00	16,985,272.29	14,640,385.00	12,052,844.93	9,967,236.26	9,069,689.91
Stockholders' investment.....	11,564,000.00	11,920,000.00	12,442,000.00		2,200,000.00	198,000.00	621,763.25	1,475,606.45	187,500.00	250,000.00
Total investment.....	19,130,237.14	19,966,142.35	19,914,545.49		18,994,105.00	17,183,272.29	15,262,150.25	13,528,453.38	10,156,436.26	9,319,689.91
Average of stockholders' investment.....	7,806,189.74	7,759,343.92	7,472,545.49	\$12,714,761.32	16,889,688.64	15,812,828.64	13,967,857.06	11,010,040.59	9,518,463.08	9,069,689.91
Average of total investment, in- cluding intangibles.....	19,548,189.74	19,940,343.92	19,914,545.49	13,396,148.00	18,088,688.64	16,222,711.28	15,105,293.91	11,842,444.82	9,738,063.08	9,319,689.91
Net income applicable to stockholders' investment.....	479,100.78	1,605,533.12	2,406,028.06		2,815,381.32	4,291,245.46	3,642,434.50	2,825,723.69	1,550,605.80	904,758.31
Add interest on funded debt.....	706,175.00	737,866.35	747,681.60		100,024.26					
Net income applicable to total investment.....	1,185,275.78	2,343,399.47	3,153,709.66	3,035,434.32	2,915,405.58	4,291,245.46	3,642,434.50	2,825,723.69	1,550,605.80	904,758.31
Rate of return applicable to stockholders' investment.....	Percent 6.14	Percent 20.69	Percent 32.20	Percent 23.65	Percent 128.58	Percent 27.14	Percent 26.34	Percent 25.66	Percent 16.29	Percent 9.98
Rate of return applicable to total investment.....	6.06	11.75	15.84	22.66	127.63	26.45	24.02	23.86	15.92	9.71
Intangibles eliminated.....	3.74	7.23	9.68							

¹ Investment at beginning of year not available; end of year balance used as average for year.

² The total investment at the end of the year 1924 includes the investment of the company, Penn-Allen, which was not available for 1923 and therefore not included in the total investment at the end of 1923. However, for the purpose of computing the average investments for 1924 for all predecessor companies as a group, the total investment and stockholders' investment of Penn-Allen, amounting to \$1,539,984.18 and \$1,282,484.18, respectively, at the end of 1924, were included with the investments of all other companies at the end of 1924. See table 6.

The table shows that the rates of return on total investment for the predecessor companies steadily increased from slightly less than 10 percent for 1921 to more than 27 percent by the end of July, 1926, just 2 months before the consummation of the consolidation. Later figures for the consolidated companies are not available. Rates of return on total investment of the Pennsylvania-Dixie Cement Corporation, based on calculations eliminating the effect of intangible value from both income and investment, were considerably below rates earned by the combined companies prior to the consolidation. In 1927, the first full year's operation of the new company, rate of return on total investment was over 10 percent less than it was for the last full year's operation of the predecessor companies. Rates for the new company continued to decline with almost no interruption in the downward trend from 1927 to the close of 1932. The trend was then reversed and by 1934 the Penn-Dixie made a profit of 2.52 percent on total investment. The following years showed some improvement. The rate in 1936 reached 8.31 percent; but for the last 2 years the rate has been in the neighborhood of 4½ percent.

Operating economies as the result of the consolidation are not much in evidence from a comparison of the rates of return on total investment. The rate of return for 5 years preceding the consolidation was less than half of that for the 5 years subsequent to the consolidation. Rate of return for the predecessor companies as a group for 1921-25, inclusive, was approximately 21 percent, while the rate of return for the Penn-Dixie for 1927-31, inclusive, was just 8 percent.

Comparison of rates of return on stockholders' investment is not so significant. The predecessor companies possessed little or no funded debt, while the Penn-Dixie had a large amount of funded debt. As long as the rate of return on total investment was greater than the rate of interest on borrowed money, the stockholders of Penn-Dixie benefited as the result of their leverage. This effect was particularly noticeable in 1927, when the return of stockholders' investment was over 32 percent, or more than twice the rate of return on total investment. This greater opportunity for profit, if we may judge from the subsequent history of the company, was more than offset by the increased risk attaching to their junior position. Rate of return on stockholders' investment for the period 1927-38, inclusive, was a fraction over 2 percent, which was less than one-half the rate earned on total investment for the same period.

The consolidation of the Penn-Dixie resulted in the inclusion of approximately \$13,000,000 of intangible value in the fixed assets of the new company. This intangible value served as a base on which to issue an equivalent amount of Penn-Dixie securities. From the company's point of view it was necessary that a rate of return be earned on this value. For this reason, table 5 includes the rate of return on total investment on a book basis. This rate was approximately half the rate of return on total investment excluding intangibles. However, this comparison does not properly reflect the effect of intangible values on the rate of return. From 1927 to the close of 1936, the Pennsylvania-Dixie Cement Corporation wrote off some \$3,000,000 of intangible value. In 1937 decision by the company was reached to eliminate the remaining \$9,300,000 of intangible value by the direct reduction of the capital account. This write-off of approximately three-quarters of the intangible value arising at the time of the

consolidation had no effect on the rate prior to 1936 computed on a book basis. In view of the action of the company it seems probable that a good part of the reduction of intangible value in 1937 was applicable to prior years.

Table 6, which follows, presents comparative balance sheets for the Pennsylvania-Dixie Cement Corporation for 1926-38, and for the predecessor companies as a group for 1921 to July 31, 1926. The balance sheets give the details of investment used in computing the rates of return, and contain other pertinent information regarding the financial position of the companies involved in the consolidation.

TABLE 6.—Comparative balance sheets of Pennsylvania-Dixie Cement Corporation, 1926-38 and of predecessor companies as a group, 1921-July 31, 1926

	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929
Fixed assets:										
Land, buildings, machinery and equipment.....	\$33,070,226	\$33,020,358	\$33,123,034	\$35,263,865	\$35,387,131	\$35,125,741	\$35,371,040	\$35,372,160	\$35,113,654	\$34,575,221
Less reserve for depreciation and depletion.....	18,871,851	17,714,814	16,668,297	16,557,028	15,435,362	14,336,572	13,412,927	12,089,772	10,761,220	9,434,386
Total.....	14,198,375	15,305,544	16,454,737	18,706,837	19,951,769	20,789,169	21,958,113	23,282,388	24,352,434	25,140,834
Less special reserve for intangibles.....	7,578,714	8,323,265								
Total net fixed assets.....	6,619,661	6,982,279	16,454,737	18,706,837	19,951,769	20,789,169	21,958,113	23,282,388	24,352,434	25,140,834
Current assets:										
Inventories.....	1,413,264	1,398,813	1,376,330	1,680,774	1,558,677	1,893,858	1,772,847	2,048,638	2,819,108	2,602,418
All other current assets.....	3,536,398	3,290,876	3,733,714	2,591,478	2,778,710	2,622,951	3,252,113	3,853,944	3,892,088	3,673,777
Total current assets.....	4,949,662	4,689,689	5,110,044	4,272,252	4,337,387	4,516,809	5,024,960	5,902,582	6,711,196	6,276,195
Other assets.....	753,479	772,618	1,165,430	119,990	121,112	119,677	115,768	110,926	557,460	451,976
Total assets.....	12,324,802	12,444,586	22,730,211	23,090,079	24,410,268	25,425,655	27,098,841	29,295,896	31,621,090	31,869,005
Liabilities and net worth:										
Current liabilities.....	344,736	352,099	350,486	356,840	346,544	399,095	320,297	418,426	413,015	586,088
Reserve for Federal income and profit taxes.....	104,388	60,896	212,000					26,643	178,959	98,767
Miscellaneous operating and contingent reserves.....	143,921	120,828	98,482	123,376	118,172	110,669	107,097	77,720	82,003	68,876
Special reserve for improvements and betterments.....									17,751	26,316
Miscellaneous liabilities.....										
Funded debt.....	7,167,000	7,476,000	8,288,000	8,634,000	9,242,000	9,557,000	9,655,000	10,123,000	10,712,500	11,594,000
Total liabilities.....	7,760,045	8,009,823	8,948,968	9,114,216	9,706,716	10,066,764	10,082,994	10,645,789	11,434,228	12,344,047
Net worth, capital stock:										
Preferred.....	3,030,000	3,030,000	12,120,000	12,120,000	12,120,000	12,120,000	12,500,000	13,098,800	13,588,800	13,588,800
Common.....	400,000	400,000	400,000	400,000	400,000	400,000	4,000,000	4,000,000	4,000,000	4,000,000
Total capital stock.....	3,430,000	3,430,000	12,520,000	12,520,000	12,520,000	12,520,000	16,500,000	17,098,800	17,588,800	17,588,800
Surplus.....	1,134,757	1,004,763	1,261,243	1,464,803	2,183,552	2,838,891	515,847	1,551,307	2,598,062	1,936,158
Total net worth.....	4,564,757	4,434,763	13,781,243	13,984,803	14,703,552	15,358,891	17,015,847	18,650,107	20,186,862	19,524,958
Total liabilities and net worth.....	12,324,802	12,444,586	22,730,211	23,090,079	24,410,268	25,425,655	27,098,841	29,295,896	31,621,090	31,869,005

TABLE 6.—Comparative balance sheets of Pennsylvania-Dixie Cement Corporation, 1926-38 and of predecessor companies as a group, 1921-July 31, 1926—Continued

	1928	1927	1926	July 31, 1926	1925	1924	1923	1922	1921
Fixed assets:									
Land, buildings, machinery, and equipment.....	\$34,613,160	\$32,546,878	\$31,221,149				\$11,436,369	\$8,507,093	\$7,212,459
Less reserve for depreciation and depletion.....	8,102,114	6,132,080	4,990,907				3,361,744	2,629,341	2,629,341
Total.....	26,511,046	26,414,798	26,233,242				7,874,625	5,877,752	5,883,218
Less special reserves for intangibles.....									
Total net fixed assets.....	26,511,046	26,414,798	26,233,242	\$13,150,207	\$12,760,310	\$11,537,957	7,874,625	5,877,752	5,883,218
Current assets:									
Inventories.....	3,394,903	2,964,915	2,704,145	2,452,968	2,055,046	2,010,833	1,718,552	1,283,093	1,652,433
All other current assets.....	2,838,662	3,798,897	4,509,395	4,461,209	3,131,980	2,743,131	3,591,440	2,549,702	1,500,859
Total.....	6,233,565	6,763,812	7,213,540	6,914,177	5,187,026	4,753,964	5,309,992	3,832,795	3,153,292
Other assets.....	188,792	190,790	230,378	265,357	716,002	299,671	1,146,159	993,362	1,095,451
Total assets.....	33,033,403	33,369,400	33,677,160	20,329,741	18,669,838	16,591,592	14,330,776	10,703,909	10,132,041
Liabilities and net worth:									
Current liabilities:									
Reserve for Federal income and profit taxes.....	747,038	753,931	630,437	1,335,636	1,486,565	1,323,341	776,138	542,828	812,351
Miscellaneous operating and contingent reserves.....	283,901	374,727	700,221	477,515	634,577	619,503			
Special reserve for improvements and betterments.....	50,044	42,022	67,523	184,673	7,269	5,261	945,732	855,730	462,711
Miscellaneous liabilities.....	128,156	500,000							
Funded debt.....	11,920,000	12,442,000	12,468,000	2,200,000	198,000	6,100	26,185	4,644	
Total liabilities.....	13,129,139	14,112,700	13,886,181	4,197,824	2,326,411	2,575,970	1,475,608	189,200	250,000
Net worth, capital stock:									
Preferred.....	13,588,800	13,000,000	13,000,000	1,951,300	2,130,400	2,382,840	2,382,840	2,382,840	2,382,840
Common.....	4,000,000	4,000,000	4,000,000	7,431,233	8,929,800	7,188,620	6,536,740	5,516,640	4,244,740
Total capital stock.....	17,588,800	17,000,000	17,000,000	9,382,533	11,060,200	9,571,460	8,919,580	7,899,480	6,627,580
Surplus.....	2,315,464	2,256,700	2,790,979	6,749,384	5,283,227	4,444,162	2,187,533	1,212,027	1,979,399
Total net worth.....	19,904,264	19,256,700	19,790,979	16,131,917	16,343,427	14,015,622	11,107,113	9,111,507	8,606,979
Total liabilities and net worth.....	33,033,403	33,369,400	33,677,160	20,329,741	18,669,838	16,591,592	14,330,776	10,703,909	10,132,041

While we are principally concerned with the predecessor companies as a group, it is of some interest to know which were the more profitable companies entering into the consolidation. The rates of return for the predecessor companies for the years 1921 to 1925, inclusive, are shown in table 7, which follows:

TABLE 7.—*Investments, profits, and rates of return for predecessor companies of Pennsylvania-Dixie Cement Corporation, 1921-25*

	Average 1921-25	1921	1922	1923	1924	1925
Total investment:						
Clinchfield Portland Cement Corporation, average ¹	\$3, 289, 286.03	{ \$2, 587, 330.71 2, 587, 330.71 1, 422, 111.74 1, 422, 111.74 1, 819, 345.23 1, 819, 345.23 3, 490, 902.23 3, 490, 902.23	\$2, 878, 135.87 2, 732, 733.29 1, 423, 907.95 1, 423, 009.85 2, 075, 303.71 2, 075, 303.71 1, 947, 324.47 3, 779, 088.73 3, 634, 905.48	\$3, 535, 350.05 3, 206, 742.96 1, 703, 338.07 1, 563, 623.01 4, 263, 531.81 3, 899, 339.57 3, 169, 417.76 4, 026, 233.45 3, 902, 661.09	\$3, 807, 303.31 3, 716, 336.68 2, 080, 588.24 1, 891, 963.16 3, 899, 339.57 4, 081, 435.69 3, 844, 934.95 3, 935, 584.20 { 1, 539, 984.18 1, 539, 984.18	\$4, 509, 289.70 4, 203, 286.51 2, 429, 640.11 2, 255, 114.18 4, 721, 451.27 4, 310, 395.42 4, 051, 795.53 3, 948, 365.24 1, 471, 095.68 1, 505, 539.93
Dexter Portland Cement Co., average ¹	1, 711, 164.39	{ 1, 422, 111.74 1, 422, 111.74 1, 819, 345.23 1, 819, 345.23 3, 490, 902.23 3, 490, 902.23	1, 423, 907.95 1, 423, 009.85 2, 075, 303.71 2, 075, 303.71 1, 947, 324.47 3, 779, 088.73 3, 634, 905.48	1, 703, 338.07 1, 563, 623.01 4, 263, 531.81 3, 899, 339.57 3, 169, 417.76 4, 026, 233.45 3, 902, 661.09	2, 080, 588.24 1, 891, 963.16 3, 899, 339.57 4, 081, 435.69 3, 844, 934.95 3, 935, 584.20 { 1, 539, 984.18 1, 539, 984.18	2, 429, 640.11 2, 255, 114.18 4, 721, 451.27 4, 310, 395.42 4, 051, 795.53 3, 948, 365.24 1, 471, 095.68 1, 505, 539.93
Pennsylvania Cement Co., average ¹	3, 065, 583.71	{ 1, 422, 111.74 1, 422, 111.74 1, 819, 345.23 1, 819, 345.23 3, 490, 902.23 3, 490, 902.23	1, 423, 907.95 1, 423, 009.85 2, 075, 303.71 2, 075, 303.71 1, 947, 324.47 3, 779, 088.73 3, 634, 905.48	1, 703, 338.07 1, 563, 623.01 4, 263, 531.81 3, 899, 339.57 3, 169, 417.76 4, 026, 233.45 3, 902, 661.09	2, 080, 588.24 1, 891, 963.16 3, 899, 339.57 4, 081, 435.69 3, 844, 934.95 3, 935, 584.20 { 1, 539, 984.18 1, 539, 984.18	2, 429, 640.11 2, 255, 114.18 4, 721, 451.27 4, 310, 395.42 4, 051, 795.53 3, 948, 365.24 1, 471, 095.68 1, 505, 539.93
Dixie Portland Cement Co., average ¹	3, 782, 501.65	{ 1, 422, 111.74 1, 422, 111.74 1, 819, 345.23 1, 819, 345.23 3, 490, 902.23 3, 490, 902.23	1, 423, 907.95 1, 423, 009.85 2, 075, 303.71 2, 075, 303.71 1, 947, 324.47 3, 779, 088.73 3, 634, 905.48	1, 703, 338.07 1, 563, 623.01 4, 263, 531.81 3, 899, 339.57 3, 169, 417.76 4, 026, 233.45 3, 902, 661.09	2, 080, 588.24 1, 891, 963.16 3, 899, 339.57 4, 081, 435.69 3, 844, 934.95 3, 935, 584.20 { 1, 539, 984.18 1, 539, 984.18	2, 429, 640.11 2, 255, 114.18 4, 721, 451.27 4, 310, 395.42 4, 051, 795.53 3, 948, 365.24 1, 471, 095.68 1, 505, 539.93
Penn Allen Cement Co., average ¹	1, 522, 762.06	{ 1, 422, 111.74 1, 422, 111.74 1, 819, 345.23 1, 819, 345.23 3, 490, 902.23 3, 490, 902.23	1, 423, 907.95 1, 423, 009.85 2, 075, 303.71 2, 075, 303.71 1, 947, 324.47 3, 779, 088.73 3, 634, 905.48	1, 703, 338.07 1, 563, 623.01 4, 263, 531.81 3, 899, 339.57 3, 169, 417.76 4, 026, 233.45 3, 902, 661.09	2, 080, 588.24 1, 891, 963.16 3, 899, 339.57 4, 081, 435.69 3, 844, 934.95 3, 935, 584.20 { 1, 539, 984.18 1, 539, 984.18	2, 429, 640.11 2, 255, 114.18 4, 721, 451.27 4, 310, 395.42 4, 051, 795.53 3, 948, 365.24 1, 471, 095.68 1, 505, 539.93
Net income applicable to total investment:						
Clinchfield Portland Cement Corporation.....	575, 109.99	246, 708.91	460, 569.09	813, 926.56	678, 614.85	675, 730.45
Dexter Portland Cement Co.....	421, 372.40	320, 156.28	150, 960.95	374, 140.76	592, 647.49	693, 956.50
Pennsylvania Cement Co.....	812, 048.97	54, 885.49	225, 881.57	873, 407.90	1, 206, 043.31	1, 700, 026.60
Dixie Portland Cement Co.....	685, 672.80	283, 007.63	713, 194.19	764, 248.47	801, 808.46	866, 102.76
Penn Allen Cement Co.....	1, 371, 874.77				363, 320.39	380, 429.15
Rate of return on total investment:						
Clinchfield Portland Cement Corporation.....	2, 866, 078.43	904, 758.31	1, 550, 605.80	2, 825, 723.69	3, 042, 434.50	4, 291, 245.46
Dexter Portland Cement Co.....	Percent 17.48	Percent 9.54	Percent 16.85	Percent 25.38	Percent 18.26	Percent 16.08
Pennsylvania Cement Co.....	24.62	22.51	10.61	23.93	31.32	29.66
Dixie Portland Cement Co.....	26.49	3.02	11.60	27.56	29.55	39.44
Penn Allen Cement Co.....	18.13	8.11	13.62	19.58	20.37	21.94
	24.42				23.39	25.27
	21.43	9.71	15.92	23.86	24.02	26.45

¹ Average of investment at beginning and end of year, except for 1921 when the investment at the end of the year was used and except for 1924 in the case of Penn Allen when the year end investment was used.

INCOME AND EXPENSES

Table 8, which follows, presents the comparative income statements for the Pennsylvania-Dixie Cement Corporation for 1927-38, and for the predecessor companies as a group for 1921 to July 31, 1926. These statements give in detail the determination of net income applicable to both total investment and stockholders' investment, and supply the basis for the determination of unit costs and other operating ratios:

Reduction in par value of preferred stock.....	9,090,000.00	9,090,000.00
Profit on retirement of preferred stock.....	1,218,536.07	24,445.00
Profit on purchase of own bonds below par.....	680,308.46	43,277.50
Other.....		43,277.50
Total additions or deductions.....	4,681,144.83	6,284,862.61
Surplus at end of period.....	1,134,757.37	1,004,763.39

Pennsylvania-Dixie Cement Corporation

	1932	1931	1930	1929	1928	1927
Net sales.....	\$3,476,723.77	\$6,117,673.99	\$8,625,170.57	\$9,610,646.41	\$11,838,443.08	\$12,118,114.47
Manufacturing costs:						
Wages and salaries.....	360,764.43	714,476.71	974,457.11	1,891,063.22	2,349,700.86	2,351,259.87
Supplies and materials.....	654,292.09	1,032,580.65	1,106,735.86	1,182,148.58	1,100,725.21	1,252,089.37
Coal.....	562,002.02	852,000.39	1,123,950.27	1,283,340.47	1,644,948.54	1,670,839.40
Power.....	222,266.55	441,658.54	538,874.90	338,837.18	549,113.08	494,866.65
Other.....	394,799.58	885,735.97	743,511.02	564,063.52	989,087.58	879,006.71
Total.....	2,394,714.67	3,929,452.26	4,581,859.16	5,259,902.97	6,633,645.27	6,638,652.00
Inventory increase or decrease.....	127,111.25	290,645.43	3120,289.44	318,731.09	376,375.33	3168,846.89
Manufacturing costs, exclusive of depreciation and depletion.....	2,521,825.92	4,220,097.69	4,461,569.72	5,578,634.06	6,557,269.94	6,469,815.11
Depreciation and depletion.....	1,122,564.00	1,224,630.00	1,246,910.00	1,311,382.00	1,278,769.00	1,129,153.00
Distributions and administrative expenses.....	924,869.18	1,314,549.71	1,620,940.42	1,733,130.65	1,878,637.89	1,365,436.70
Total operating expense.....	4,569,259.10	6,759,277.40	7,329,420.14	8,623,146.71	9,714,676.83	8,964,404.81
Net operating income.....	1,092,535.33	641,903.41	1,295,750.43	987,499.70	2,123,766.25	3,153,709.66
Other income.....	76,148.16	79,609.26	197,950.08	197,776.08	219,633.22	---
Net income applicable to total investment.....	1,016,387.17	661,994.15	1,493,700.51	1,185,275.78	2,343,399.47	3,153,709.66
Less: Interest on funded debt.....	590,005.73	628,012.62	669,376.42	706,175.00	737,866.35	2,406,028.06
Net income applicable to stockholders' investment.....	416,381.44	31,981.53	824,324.09	479,100.78	1,605,533.12	307,065.52
Less: Provision for Federal income and excess-profits taxes.....	1,606,392.90	1,190,006.77	104,483.60	62,288.73	205,665.45	307,065.52
Net income.....	1,606,392.90	1,190,006.77	719,840.49	416,802.05	1,399,867.67	2,098,962.54
Less: Depreciation and depletion of intangibles.....	259,838.02	168,499.55	132,379.00	84,533.00	106,015.70	131,468.81
Net income for year per books.....	1,866,230.92	1,358,506.32	587,461.49	332,268.45	1,293,851.97	1,967,493.73
Surplus at beginning of period.....	1,551,306.62	2,598,061.73	1,936,158.27	2,315,464.32	2,236,700.34	2,790,978.05
Total.....	3,114,924.30	1,239,555.41	2,523,619.76	2,647,732.77	3,550,552.31	4,758,472.38
Less: Dividends.....				711,574.50	1,334,119.67	1,950,000.00
Total.....	3,114,924.30	1,239,555.41	2,523,619.76	1,936,158.27	2,216,432.64	2,808,472.38

See footnotes at end of table.

TABLE 8.—Summary of income, expenses, and surplus of Pennsylvania-Dixie Cement Corporation, 1927-38, and of predecessor companies, 1921 to July 31, 1926, inclusive—Continued

Pennsylvania-Dixie Cement Corporation						
	1932	1931	1930	1929	1928	1927
Additions and deductions:						\$ 500,000.00
Amortization of intangibles.....						
Reduction in stated value of common stock.....						
Reduction in par value of preferred stock.....	\$503,622.36	\$203,781.21				
Profit on retirement of preferred stock.....	267,148.69	267,417.50	\$156,622.65			
Profit on purchase of own bonds below par.....		\$ 249,447.50	\$ 82,180.68		\$80,031.08	\$ 51,772.04
Other.....						
Total additions or deductions.....	830,771.05	311,751.21	74,441.97		99,031.68	\$ 551,772.04
Surplus at end of period.....	515,846.75	1,551,306.62	2,598,061.73	\$1,536,158.27	2,315,464.32	2,256,700.34
Predecessor companies						
	7 months ended July 31, 1926	1925	1924	1923 ¹	1922 ¹	1921 ²
Net sales.....	\$8,340,708.22	\$14,320,343.42	\$13,190,454.76	\$10,528,429.79	\$8,827,812.03	\$7,938,221.79
Manufacturing costs:						
Wages and salaries.....		1,616,995.04	1,572,266.86	1,479,668.18	1,228,935.11	1,216,552.04
Supplies and materials.....		2,394,862.74	2,491,909.37	2,171,943.17	2,227,159.30	2,322,899.61
Coal.....		391,885.68	715,775.60	812,652.59	776,382.39	420,658.83
Power.....		328,407.49	648,669.80	718,202.82	712,828.61	547,149.87
Other.....		3,167,884.04	1,909,535.54	1,019,658.36	790,985.03	1,356,212.73
Total.....		7,900,034.39	7,238,157.17	6,202,125.12	5,736,290.44	5,863,473.08
Inventory increase or decrease.....		³ 189,023.48	³ 82,756.08	³ 41,671.51	220,056.45	³ 220,727.78
Manufacturing costs, exclusive of depreciation and depletion.....	4,058,908.26	7,711,010.91	7,320,913.25	6,160,453.61	5,956,346.89	5,642,745.30
Depreciation and depletion.....	596,469.64	810,350.64	765,399.45	592,786.04	520,273.81	602,639.81
Distribution and administrative expenses.....	909,725.67	1,730,095.06	1,632,632.95	1,093,583.16	944,464.45	861,822.30
Total operating expense.....	5,565,103.57	10,251,456.61	9,718,875.65	7,846,822.81	7,421,085.15	7,107,207.41

Net operating income.....	2,775,604.65	4,068,886.81	3,471,579.11	2,681,606.98	1,406,726.88	831,014.38
Other income.....	139,800.93	222,358.65	170,855.39	144,116.71	143,878.92	73,743.93
Net income applicable to total investment.....	2,915,405.58	4,291,245.46	3,642,434.50	2,825,723.69	1,550,605.80	904,758.31
Less: Interest on funded debt.....	100,024.26					
Net income applicable to stockholders' investment.....	2,815,381.32	4,291,245.46	3,642,434.50	2,825,723.69	1,550,605.80	904,758.31
Less: Provision for Federal income and excess-profits taxes.....	386,317.61	576,540.98	439,525.09	409,614.31	10,038.45	(⁵)
Net income.....	2,429,063.71	3,714,704.48	3,182,905.41	2,416,109.38	1,540,567.35	904,758.31
Less: Depreciation and depletion of intangibles.....						
Net income for year per books.....	2,429,063.71	3,714,704.48	3,182,905.41	2,416,109.38	1,540,567.35	904,758.31
Surplus at beginning of period.....	5,012,161.34	4,444,162.00	2,187,533.00	1,212,027.00	1,979,399.00	(⁵)
Total.....	7,441,225.05	8,158,866.48	5,370,438.41	3,628,136.38	3,519,966.35	(⁵)
Less: Dividends.....	736,268.25	2,794,532.00	1,296,478.00	(⁵)	(⁵)	(⁵)
Total.....	6,704,956.80	5,364,334.48	4,073,960.41	3,628,136.38	3,519,966.35	
Additions and deductions:						
Amortization of intangibles.....						
Reduction in stated value of common stock.....						
Reduction in par value of preferred stock.....						
Profit on retirement of preferred stock.....						
Profit on purchase of own bonds below par.....						
Other.....						
Total additions or deductions.....		⁶ 517,853.79	⁶ 4,415.79	(⁵)	(⁵)	(⁵)
Surplus at end of period.....	6,704,956.80	4,846,480.69	4,069,544.62	2,187,533.00	1,212,027.00	1,979,399.00

- ¹ Does not include Penn Allen Cement Co.
² Does not include Penn Allen Cement Co. or Cayuga Operating Co.
³ Denotes inventory increase.
⁴ Denotes loss.
⁵ Detail not available.
⁶ Denotes surplus deduction.

In connection with the foregoing table, it will be noted that certain extensive readjustments in the capital structure of the Penn-Dixie were effected through surplus.

In 1933, surplus was increased \$3,600,000 as the result of the reduction in the stated value of the common stock from \$10 a share to \$1 a share, there being no change in the number of shares outstanding. As the result, the stated value of the 400,000 shares of common stock was reduced from \$4,000,000 to \$400,000. The primary purpose of this adjustment was to eliminate the deficit carried in surplus. The net loss for 1933 of \$1,674,739 was sufficiently large to wipe out the rather small surplus balance existing at the beginning of the year, and thus to produce a deficit of \$1,158,892. To correct this condition, the company felt compelled to reduce the stated value of the common stock.

In 1937 it was decided to eliminate the rest of the intangible value arising at the time of the consolidation in 1926, the bulk of which remained. Since the surplus was inadequate to permit of such a large write-off, it was necessary to reduce the value of the preferred stock from a par value of \$100 a share to a stated value of \$25 a share. Since the number of shares remained the same, this resulted in a reduction in the value of the preferred stock from a par value of \$12,120,000 to a stated value of \$3,030,000. The difference of \$9,090,000 was transferred to surplus and was used together with \$309,307.61 of surplus to write off the remaining intangible value of \$9,399,307.61.

Voting rights and preferences of the 7 percent cumulative preferred stock were not substantially altered by this change. The preferred stock continued to possess the right to elect a majority of the directors on default of four quarterly dividends or sinking fund installments for one year. The preferred stock has the same preferences as to assets and dividends. In liquidation it is entitled to receive \$110 a share and dividends, if voluntary, and \$100 a share and dividends if involuntary. The stock is callable, on 30 days' notice, on any dividend date.

The Penn-Dixie has passed most of the dividend dates since its consolidation, although approximately \$4,000,000 in dividends have been paid since 1926. Dividends on preferred stock were paid at the rate of \$1.75 per share on December 15, 1926, and quarterly thereafter at that rate to September 16, 1929. Dividends were paid on the common stock at the rate of 80 cents a share on January 3, 1927, and quarterly thereafter at that rate to July 1, 1927; and at the rate of 50 cents per share on October 1, 1927, and quarterly thereafter at that rate to July 1, 1928. No dividends have been paid on the common since that date, and no dividends on the preferred have been paid since September 16, 1929. The unpaid dividends on the preferred stock amounted to \$64.75 per share, or \$7,847,700, on December 15, 1938.

The market value of the preferred and common stocks has declined drastically since the consolidation. At the formation of the Penn-Dixie Co. in September 1926, the preferred and common stocks were publicly offered at \$99 and \$43 per share, respectively. During that.

year the market value of the preferred stock ranged from 99 to 100½ and the common stock ranged from 36½ to 43½. In 1938 these values had declined to a range of 10½ to \$30 per share for the preferred and to 2½ to 5½ for the common.

Funded debt of the Penn-Dixie was reduced from \$13,000,000 at the time of the consolidation in 1926 to \$7,167,000 by the end of 1938. In the process of debt retirement, the company made a profit of \$1,218,536 through the purchase of its own bonds below par. The reduction in debt likewise resulted in a reduction in fixed interest charges. In 1927 these charges amounted to \$747,681, while in 1938 they were only \$438,466.

Although the preceding table presents a record of the operations of the Penn-Dixie and its predecessor companies, the relationship of the various items appearing in the statements are perhaps more easily grasped from table 9, presented on p. 178, which shows costs and income in terms of percent of net sales.

In the case of the predecessor companies, it is readily apparent that an increasing proportion of net sales was retained as net income. The increasing margin of profit between sales and total costs was due to decreasing manufacturing costs. Depreciation and depletion and administration and distribution expenses remained almost constant throughout the 5-year period, 1921-25.

The experience of the Pennsylvania-Dixie Cement Corporation since the consolidation has not been so fortunate. The most successful year in terms of these percentages occurred in 1927, when the percent of net income applicable to total investment was slightly less than it was in 1925. Increased depreciation and depletion charges largely accounted for the difference. From 1927 to 1931 the percent of net income applicable to total investment continued to decline. In 1932 total operating costs exceeded net sales by 32 percent. In other words total operating costs increased from 74 percent of net sales in 1927 to 132 percent in 1932. Approximately two-thirds of this increase represents percentage increases in depreciation and depletion and administration and distribution expenses. The remaining one-third of the increase is due to the increased percentage absorbed by manufacturing costs. In spite of the fact that labor costs decreased approximately 9 percent in terms of net sales other items of manufacturing costs failed to decline as rapidly as did net sales. This was particularly true in the case of supplies and materials and "other" manufacturing expenses.

From 1932, the trend in total operating expenses in relation to net sales was downward, particularly between 1933 and 1934 when the decline was most pronounced. Manufacturing expenses fell quickly to a low for the period of 48 percent in 1934. The following year showed an increase to 54 percent, and from this time on manufacturing expenses changed little. The decrease in depreciation and depletion charges and in administration and distribution costs was responsible for most of the decline in total operating expenses. It is of significance that while depreciation and depletion charges in 1938 were practically the same percent of sales as they were in 1927, administration and distribution costs were almost twice as much in 1938 as they were in 1927.

TABLE 9.—Percent of costs, expenses, and income to net sales of Pennsylvania-Dixie Cement Corporation, 1927-38, and of predecessor companies, 1921-25

Sales	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	1925	1924	1923	1922	1921
	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent
Manufacturing costs:																	
Wages and salaries.....	20	20	15	17	15	9	10	12	11	20	20	19					
Supplies and materials.....	10	9	9	9	16	16	16	17	14	12	9	10					
Coal.....	14	13	13	13	12	13	16	14	13	13	14	14					
Power.....	5	4	3	4	4	5	7	7	6	4	5	4					
Other.....	10	11	13	13	12	14	17	14	9	6	9	7					
Total.....	59	57	51	56	52	57	68	64	53	55	57	54					
Inventory increase or decrease.....	11	1	2	12	14	1	4	5	11	3	11	11					
Total manufacturing costs, exclusive of depreciation and depletion.....	58	58	53	54	48	58	72	69	52	58	56	53	54	55	58	67	71
Depreciation and depletion.....	9	10	10	16	19	36	33	20	14	14	11	9	6	6	6	6	8
Distribution and administration expense.....	24	24	21	25	27	35	27	21	19	18	15	12	12	13	11	11	11
Total operating expense.....	91	92	84	95	94	129	132	110	85	90	82	74	72	74	75	84	90
Net operating income.....	9	8	16	5	6	229	32	210	15	10	18	26	28	26	25	16	10
Other income.....	1	1	1	1	1	2	2	1	2	2	2		2	1	1	2	1
Net income applicable to total investment.....	10	9	17	6	7	227	30	29	17	12	20	26	30	27	26	18	11
Interest on funded debt.....	7	8	8	11	12	21	17	10	8	7	6	6					
Net income applicable to stockholders' investment.....	3	1	9	25	25	248	247	219	9	5	14	20					
Depreciation applicable to intangibles.....			11	11	10	14	7	3	2	1	1	1					
Total.....	3	1	22	216	215	262	254	222	7	4	13	19					
Federal income and profits taxes.....	1		2						1	1	2	3					
Net income for year.....	2	1	24	216	215	262	254	222	6	3	11	16					

¹ Denotes inventory increase.² Denotes loss.

The effect of the injection of \$13,000,000 of funded debt into the capital structure of the Pennsylvania-Dixie Cement Corporation is particularly noticeable during the depression years, 1931-35, when the burden of fixed costs was onerous. In 1933 approximately 21 percent of net sales were required to meet interest on the funded debt. In this same year the depreciation and depletion charges applicable to the intangible values, capitalized at the time of the consolidation, amounted to 14 percent of net sales. Such factors as these seem easily borne in good times, but their inflexibility makes retrenchment during poor business conditions most difficult.

UNIT COSTS

The reduction of the income statement to a "per barrel" basis provides an excellent measure of comparison for determining the relative efficiency of companies within the cement industry. This method of comparison is particularly desirable in view of the fact that the companies produce but one commodity. The variation in quality of the great bulk of cement produced is not a significant factor in accounting for variations in the costs of production. Since the operating statements of the various companies are based upon the number of barrels sold rather than upon the number of barrels actually produced, the costs and other items appearing in table 10, which follows, are computed on the basis of the barrels of cement sold annually:

TABLE 10.—Per barrel costs, expenses and income of Pennsylvania-Dixie Cement Corporation, 1927-38, and of predecessor companies, 1921-July, 1926

	1938	1937	1936	1935	1934	1933	1932	1931	1930
Shipments of cement (number of barrels).....	4,300,630	4,126,334	4,112,189	3,219,587	2,951,226	2,241,951	3,626,094	5,856,522	6,352,465
Sales.....	\$1.40	\$1.449	\$1.554	\$1.560	\$1.573	\$1.220	\$0.959	\$1.044	\$1.358
Manufacturing costs:									
Wages and salaries.....	.290	.286	.238	.265	.238	.107	.099	.122	.153
Supplies and materials.....	.129	.129	.110	.144	.144	.110	.180	.176	.188
Coal.....	.192	.189	.196	.207	.195	.153	.155	.145	.177
Power.....	.068	.057	.047	.055	.057	.067	.061	.073	.085
Other.....	.141	.158	.200	.201	.193	.166	.164	.152	.118
Manufacturing costs exclusive of depreciation and depletion ¹.....	.816	.833	.813	.837	.759	.696	.695	.721	.702
Depreciation and depletion.....	.119	.142	.166	.253	.300	.444	.309	.209	.196
Distribution and administration expense.....	.340	.356	.331	.398	.411	.429	.255	.224	.255
Total operating expense.....	1.275	1.331	1.310	1.487	1.470	1.570	1.260	1.154	1.154
Net income applicable to total investment.....	.133	.126	.255	.093	.116	2.370	2.280	2.096	.235
Interest on funded debt.....	.102	.116	.125	.166	.191	.257	.163	.107	.105
Net income applicable to stockholders' investment.....	.031	.010	.130	2.073	2.073	2.577	2.443	2.263	.130
Depreciation and depletion applicable to intangibles.....	.....	.....	.167	.174	.159	.169	.071	.029	.021
Shipments of cement (number of barrels).....	7,438,237	8,448,903	8,214,271	4,909,795	8,264,387	7,527,887	6,532,718	6,031,395	4,138,916
Sales.....	\$1.292	\$1.401	\$1.475	\$1.698	\$1.733	\$1.752	\$1.836	\$1.673	\$1.918
Manufacturing costs:									
Wages and salaries.....	.254	.278	.286	.....	.....	.....	.....	.....	.....
Supplies and materials.....	.159	.130	.152	.....	.....	.....	.....	.....	.....
Coal.....	.172	.195	.203	.....	.....	.....	.....	.....	.....
Power.....	.045	.065	.059	.....	.....	.....	.....	.....	.....
Other.....	.076	.117	.107	.....	.....	.....	.....	.....	.....
Manufacturing costs exclusive of depreciation and depletion ¹.....	.750	.776	.788	.827	.933	.973	1.096	1.127	1.363
Depreciation and depletion.....	.176	.152	.137	.121	.098	.102	.117	.098	.146
Distribution and administration expense.....	.233	.222	.166	.185	.209	.217	.197	.185	.208
Total operating expense.....	1.159	1.150	1.091	1.133	1.240	1.291	1.396	1.426	1.717
Net income applicable to total investment.....	.139	.277	.384	.594	.519	.484	.452	.270	.219
Interest on funded debt.....	.085	.087	.091	.020	.....	.....	.....	.....	.....
Net income applicable to stockholders' investment.....	.054	.190	.293	.573	.....	.....	.....	.....	.....
Depreciation and depletion applicable to intangibles.....	.011	.013	.016	.....	.....	.....	.....	.....	.....

¹ Reflects variations in inventories which are not substantial in amount.² Denotes loss.³ Details not available.

The foregoing table presents the combined results of operations of the predecessor companies for the period from January 1, 1921, to July 31, 1926, inclusive, and the results of operations for the Pennsylvania-Dixie Cement Corporation from 1927 to 1938, inclusive. These results have all been reduced to a "per barrel" basis. Details of manufacturing costs are not shown for the predecessor companies. Accounting classifications followed by the four predecessor companies differed so widely and information necessary for their reconstruction was so inadequate that it was impossible to recast the statements to provide any degree of comparability with those of the Pennsylvania-Dixie Cement Corporation. It, therefore, is necessary in comparing the predecessor companies with the Pennsylvania-Dixie Cement Corporation to confine our attention to such summary figures as manufacturing costs, administration and distribution expenses, where classification is valid for all companies concerned. Before proceeding with our analysis, it should be pointed out that financial data for the Penn Allen Cement Co. are lacking for 1921. Since all totals are computed on a "per barrel" basis, little distortion follows as the result of the omission of the Penn Allen for this year.

An inspection of the figures for the predecessor companies as a group reveals two outstanding facts. First, the average sales price per barrel shows a fluctuating downward trend over the 5½-year period of approximately 22 cents a barrel. At the same time, total operating expenses declined 58 cents a barrel without a break in the downward trend. Thus the spread between selling price and costs increased from 22 cents in 1921 to 59 cents for the first 7 months of 1926. This constantly increasing margin of profit per barrel of cement becomes of greater significance when coupled with the fact that production and sale of cement was on the increase during this period.

Secondly, practically all of the decrease in total operating expenses occurred in manufacturing expenses. Depreciation and depletion charges, and administration and distribution expenses remained surprisingly constant throughout the whole period. The chief effect of any variation in the productive capacity utilized is principally confined to just these expenses which fluctuated little during this period. As has been pointed out elsewhere, accurate information concerning the percent of productive capacity utilized by the predecessor companies is lacking. We do know, however, that the combined productive capacity of the predecessor companies entering into the consolidation in September 1926, was approximately 10,000,000 barrels annually, and that this represented an increase over 3,000,000 barrels during the preceding 3 years. In view of the fact that sales of cement increased approximately the same amount, it is probable that the percent of plant capacity utilized by the predecessor companies during this period did not fluctuate greatly.

According to Mr. George Kilian, secretary and treasurer of the Pennsylvania-Dixie Cement Corporation, the slashing of manufacturing expenses by the predecessor companies reflects the continuous improvements in the art of making cement during this period, and the constant adaptation of the plants of the predecessor companies to these improvements. As the result of this policy on the part of the predecessor companies their plants were maintained in excellent condition.

Although we are primarily concerned with the combined results of the predecessor companies, we are also concerned to some extent with the operating trends of the individual companies. Table 11, which follows, sets forth the "per barrel" costs of these companies. All of the companies made substantial reductions in total operating costs, though the Pennsylvania Cement Co., the largest of these companies, showed the most spectacular reductions. In 1921 the total operating costs of the Pennsylvania Cement Co. were \$1.95 a barrel. For the first 7 months of 1926 these costs had been reduced to \$1.13 a barrel. On the other hand the Clinchfield Portland Cement Co., while it effected considerable reductions in total operating costs, accomplished these savings in a much more erratic manner. In 1921 total operating costs amounted to \$1.74. The next year, 1922, saw these costs reduced to \$1.33 a barrel. The following 2 years saw little change in these costs, but in the first 7 months of 1926 a further reduction to \$1.17 a barrel was made.

TABLE 11.—*Per barrel costs, expenses and income of predecessor companies of Pennsylvania-Dixie Cement Corporation, 1921 to July 31, 1926*

	1921	1922	1923	1924	1925	Jan. 1, to July 31, 1926
Sales:						
Clinchfield Portland Cement Corporation.....	\$1.982	\$1.729	\$1.880	\$1.476	\$1.766	\$1.711
Dexter Portland Cement Co.....	1.779	1.547	1.553	1.711	1.708	1.718
Pennsylvania Cement Co.....	1.962	1.636	1.953	1.536	1.819	1.716
Dixie Portland Cement Co.....	1.931	1.741	1.835	1.649	1.589	1.630
Penn Allen Cement Co.....		1.751	1.993	1.723		
Total.....	1.918	1.673	1.856	1.752	1.733	1.699
Manufacturing costs:						
Clinchfield Portland Cement Corporation.....	1.348	1.059	.989	1.045	1.089	.903
Dexter Portland Cement Co.....	1.063	1.058	.850	.835	1.954	.848
Pennsylvania Cement Co.....	1.578	1.286	1.312	1.079	.922	.784
Dixie Portland Cement Co.....	1.397	.913	.992	.811	.768	.761
Penn Allen Cement Co.....		1.331	1.243	1.031		
Total.....	1.363	1.127	1.096	.973	.933	.826
Depreciation and depletion:						
Clinchfield Portland Cement Corporation.....	.249	.110	.095	.089	.096	.119
Dexter Portland Cement Co.....	.094	.099	.095	.103	.046	.107
Pennsylvania Cement Co.....	.131	.096	.110	.119	.129	.095
Dixie Portland Cement Co.....	.115	.091	.109	.078	.126	.122
Penn Allen Cement Co.....		.097	.106	.110		
Total.....	.146	.098	.117	.102	.098	.121
Selling and administration expense:						
Clinchfield Portland Cement Corporation.....	.145	.163	.164	.178	.176	.145
Dexter Portland Cement Co.....	.289	.243	.272	.309	.280	.188
Pennsylvania Cement Co.....	.243	.185	.179	.174	.186	.209
Dixie Portland Cement Co.....	.156	.138	.171	.243	.177	.194
Penn Allen Cement Co.....		.242	.239	.220		
Total.....	.208	.185	.197	.217	.209	.185
Total operating expenses:						
Clinchfield Portland Cement Corporation.....	1.742	1.331	1.249	1.311	1.360	1.169
Dexter Portland Cement Co.....	1.447	1.400	1.217	1.247	1.279	1.143
Pennsylvania Cement Co.....	1.951	1.567	1.511	1.372	1.237	1.129
Dixie Portland Cement Co.....	1.669	1.216	1.272	1.131	1.071	1.080
Penn Allen Cement Co.....		1.671	1.590	1.361		
Total.....	1.717	1.426	1.396	1.291	1.240	1.133
Net income applicable to total investment:						
Clinchfield Portland Cement Corporation.....	.260	.429	.662	.500	.434	.556
Dexter Portland Cement Co.....	.347	.169	.348	.471	.442	.589
Pennsylvania Cement Co.....	.046	.114	.427	.500	.620	.609
Dixie Portland Cement Co.....	.262	.525	.563	.536	.544	.624
Penn Allen Cement Co.....		.111	.403	.363		
Total.....	.219	.270	.482	.484	.519	.594

1 Includes an indeterminate amount of depreciation and depletion on certain properties.

The table also shows that while the profits per barrel of the combined companies were constantly increasing, trends for the individual companies varied considerably. For most of the period, The Dixie Portland Cement Co. maintained a large and relatively stable margin of profit. The Clinchfield Portland Cement Co. likewise maintained a large margin of profit, though this margin fluctuated somewhat more than did that of the Dixie Co. The Pennsylvania Cement Co. increased its profits per barrel most rapidly. In 1921 this company earned 4.6 cents a barrel, while by 1925 this spread between total operating costs and sales had increased to 62 cents a barrel.

Returning to table 10 for a consideration of the results of operations in terms of "per barrels" of the Pennsylvania-Dixie Cement Corporation, it will be noted that quite a different picture is presented. In 1927 the consolidated company received \$1.48 a barrel for its cement. This amounted on the average to 22 cents less on each barrel sold than was received by the predecessor companies in the first 7 months of 1926. Net sales price continued to decline. In 1931 the sharpest drop occurred when sales price fell over 31 cents a barrel. In 1932 the sales price dropped to a low for the entire period of 96 cents a barrel. From this point sales price recovered rapidly. In 1934, an average selling price of \$1.57 per barrel was obtained. Since then sales price has declined 17 cents, most of this decline occurring in 1937 and 1938.

The following discussion will deal, first with the results of operations for the 5-year period 1927-31, following the consolidation, and secondly with the period since 1931. This division permits of a more direct comparison of the results of the consolidation in terms of operations. That is, a period of 5 years prior to the consolidation may be compared with a period of 5 years following the consolidation.

Although the sales price dropped sharply in 1927, the first full year's operations after the consolidation, total operating expenses were cut but 4 cents a barrel. Furthermore, this reduction was soon lost, for in the following year, 1928, total operating expenses averaged slightly above similar expenses of the combined companies just prior to the consolidation. For the next few years, these costs were held at a very even level. For the 4-year period from 1928 to 1931, total operating costs varied less than 1 cent per barrel. The great stability in operating expenses for the 5-year period following the consolidation was the result of mutually offsetting decreases in manufacturing expenses and increases in depreciation and depletion, and administration and distribution expenses. An inspection of table 10 reveals that the reduction of manufacturing expenses was achieved almost wholly by the reduction in the payments to labor in the form of wages and salaries. The per-barrel cost of labor (including superintendence) fell from almost 29 cents a barrel in 1927 to a fraction more than 12 cents a barrel in 1931. The explanation of this saving of almost 17 cents a barrel in the price of labor is not a matter of increased efficiency in the utilization of labor, but primarily the result of the great depression which paralyzed industry in the end of 1929. We find that the price of labor per barrel of cement dropped from 25.4 cents in 1929 to 15.3 cents in 1930. The average number of men employed at company plants in 1927 totaled 1,709; by 1931 the average number of men employed at the plants had been cut to 1,066. The actual decline was somewhat greater since the figures for 1927 do not include the

men employed in the plants of the Pyramid Portland Cement Co., which did not become part of the Pennsylvania-Dixie Cement Corporation until 1928.

The decline in the dollar amounts paid to labor during this period was even sharper. This is indicated in the following tabulation showing not only the amounts paid to employees of the plants of the Pennsylvania-Dixie Cement Corporation for the 5 years following the consolidation but also for all subsequent years as well.

Amounts paid to plant employees of Penn-Dixie

1927	\$2,351,259.87	1933	\$241,762.16
1928	2,349,760.86	1934	703,302.38
1929	1,891,063.22	1935	854,759.22
1930	974,487.11	1936	979,797.11
1931	714,476.71	1937	1,180,938.31
1932	360,764.43	1938	1,232,116.72

It will be observed that the amount paid to plant employees of the Penn-Dixie in 1933 was but little more than one-tenth the amount paid to plant employees in 1927. Plant employees constitute most of the employees of the Penn-Dixie. The terrific decline in the amount of wages and salaries which such employees received from 1927 to 1933, is ample evidence of the effect which the decline in the business of the Penn-Dixie had upon them. The decrease in the average number of men employed by the Penn-Dixie was not nearly so great. The following tabulation shows the average number of men employed by the Penn-Dixie at plants and in offices and sales department for the years 1926 to 1938, inclusive. The curtailment in employment by the Penn-Dixie is not fully expressed in this tabulation, since an increasing number of the employees during the depression were employed but part of the time.

Number of employees, 1926-38

	At plants	In offices and sales department	Total		At plants	In offices and sales department	Total
1926	1,770	160	1,930	1933	757	172	929
1927	1,700	156	1,856	1934	1,002	197	1,199
1928	1,620	211	1,831	1935	1,049	213	1,262
1929	1,302	213	1,515	1936	1,046	218	1,264
1930	1,251	226	1,477	1937	1,132	222	1,354
1931	1,066	223	1,289	1938	1,084	221	1,305
1932	814	203	1,017				

Returning to a consideration of other unit costs, some saving was also effected through the decrease in the price of coal. During the period 1927-31, a fraction over 5 cents a barrel was saved in this manner. However, other manufacturing expenses proved less flexible to a declining schedule of production, and absorbed a good part of the saving obtained through the decline in the price of labor and coal.

It may be fairly said that an inspection of manufacturing costs for the 5 years following the consolidation do not reveal any material increase in the efficiency of the plants of the Pennsylvania-Dixie Cement Corporation. With production declining rapidly as the result of the lessening in the demand for cement, the company was in no position to make any substantial alteration in its methods of

production. Serious decline in production did not set in until after 1928. Capital expenditures for 1927 and 1928 were far above subsequent years. These expenditures increased the capacity of the Pennsylvania-Dixie Cement Corporation from 10,000,000 barrels annually to 12,200,000. Capital expenditures for 1927 and 1928 amounted to \$3,396,018. Of this amount, however, \$1,294,265 was used to purchase an existing plant located in Iowa, far removed from the company's other plants. In the following 3 years, 1929, 1930, and 1931, the company expended for replacement and additions \$1,114,683. This amount was considerably below the total depreciation of tangible assets for these 3 years, which totalled \$3,782,922.

It has already been pointed out that the decrease in manufacturing expenses was offset by increases in distribution and administration expenses, and depreciation and depletion charges. In 1928 distribution and administration expenses jumped 5½ cents over what they were in 1927. According to Mr. George Kilian, the Pennsylvania-Dixie Cement Corporation encountered considerable difficulty in the marketing of its product. The goodwill of the predecessor companies was not transferred in full to the new consolidated company, and for that reason additional effort was required on the part of the sales force of the Pennsylvania-Dixie Cement Corporation to maintain sales. It was largely for this reason that the initial reduction in the administration and distribution costs per barrel achieved shortly after the consolidation was not retained.

The increase in depreciation and depletion per barrel was almost solely due to the decrease in production. Since charges for depletion are relatively small compared to those for depreciation, reference hereafter to depreciation is understood to include both charges. Depreciation charges remained fairly constant during the 5-year period, 1927-31. With production declining, depreciation costs per barrel mounted in inverse ratio. The increase of about 7 cents a barrel was spread quite evenly over the period.

It will be recalled that as the result of the consolidation, the valuation of the fixed assets was increased almost 100 percent. Depreciation rates of the new company were, of course, based upon the increased valuation of the fixed assets. However, in our computations we have included in depreciation only that portion applicable to tangible assets. For income tax purposes the new company was required to compute its depreciation on the bases followed by the predecessor companies. It is these annual depreciation allowances which have been used in ascertaining total operating expenses. By following this procedure, comparability between the predecessor companies and the Pennsylvania-Dixie Cement Corporation is preserved. Depreciation of intangible values averaged less than 2 cents a barrel for the first 5 years following the consolidation, and therefore was not a significant factor in increasing total operating expenses as computed by the Pennsylvania-Dixie Cement Corporation.

The period since 1931 likewise does not reveal that any important operating economies were achieved as the result of the consolidation. Manufacturing expenses for a short time decreased slightly, as the result of the decrease in per barrel payments to labor. Labor costs per barrel leaped sharply in 1934 to a point only slightly below what they were in 1927. By 1938 labor costs per barrel were above the 1927 level. Manufacturing costs followed roughly the course of labor

costs. By 1935 total manufacturing costs were above similar costs in 1927, and such costs have continued to fluctuate within very narrow limits since that time. Total operating expenses increased rapidly after 1931, due primarily to inelasticity, in depreciation and administration and distribution expenses at a time when production declined and continued at low levels. By 1933 depreciation amounted to 44 cents a barrel, or almost two-thirds of manufacturing costs for the same year. The increase in administration and distribution was only slightly less severe. In 1933, such expenses amounted to 43 cents a barrel. The effect on total operating expenses was great. In 1927, depreciation and administration and distribution expenses totaled approximately 30 cents a barrel; in 1933 these same classes of expenses totaled 87 cents a barrel. This increase of 57 cents a barrel forced total operating expenses to \$1.57 a barrel. Depreciation charges have declined steadily from the peak of 44 cents a barrel in 1933, and in 1938 at 12 cents a barrel are below such charges for 1927. This decrease is accounted for by an increase in production and by a decrease in the depreciation rates allowed by the Treasury Department. Prior to 1934, composite rates of depreciation of approximately 5 percent were allowed by the Treasury Department for cement companies. Since this time, as the result of Treasury decisions, maximum composite depreciation rates have been limited to approximately 3 percent.

The effect of the inflation of the value of the fixed assets becomes more evident as the demand for cement slackened. In 1933 depreciation for the intangible value included in the fixed assets of the company amounted to 17 cents a barrel. For the next 3 years there was loaded in costs depreciation charge for intangibles of approximately this amount. In 1936 the Pennsylvania-Dixie Cement Corporation eliminated from its accounts the remaining intangible values. This decision resulted in the writing off of over \$9,300,000 against capital accounts. Prior to this action on the part of the company, some \$3,000,000 had been written off the books through depreciation charges. Had the company attempted to recover all of this intangible value through inclusion in their costs, it is clear that total operating costs would have been much higher. From the point of view of the investor, the only way in which his capital investment may be conserved is the recovery of such values through their inclusion in cost. And to the extent of the 100 percent increase in the value of fixed assets, the consolidation increased the operating costs of the new company.

In addition to the relatively inelastic charges for depreciation and administration and distribution, the costs of the Pennsylvania-Dixie Cement Corporation were further burdened with the interest on long-term debt. The predecessor companies with little or no funded debt were not faced with this problem. The effect of the \$13,000,000 created at the time of the consolidation of funded debt on the per barrel cost of cement is shown in table 10. Funded debt has regularly decreased in accordance with the retirement program of the Pennsylvania-Dixie. This decrease for the first 5 years following the consolidation was rather closely paralleled by the decline in sales of barrels of cement. As the result of this correlation between these two factors

interest cost per barrel only increased from 9.1 cents in 1927 to 10.7 cents in 1931. For the next few years interest costs per barrel became more burdensome. In 1933 such costs amounted to 25.7 cents a barrel. This was equal to more than one-third manufacturing expenses for this year.

CAPACITY AND PRODUCTION OF PREDECESSOR COMPANIES AND OF
PENNSYLVANIA-DIXIE CEMENT CORPORATION

By reference to table 12, which follows, it may be noted that plant capacities of the predecessor companies are not available for the years 1921 to 1925, inclusive. However, production increased steadily during this period; and elsewhere herein it is shown that during this period the predecessor companies spent large amounts in modernizing their plants. In connection with the organization of the Pennsylvania-Dixie Cement Corporation, Chairman Richard Hardy wrote a letter, dated September 18, 1926, in which he stated that during the years 1923, 1924, 1925, and to July 31, 1926, the annual capacity of the plants was increased by more than 3,000,000 barrels. The capacities of these plants were increased until the combined annual capacity of the several plants was 10,000,000 barrels per annum in 1926. Shortly thereafter additional plants were acquired which largely accounted for an increase of over 2,000,000 barrels in the total annual capacity of these plants.

The table also shows that the capacity of all of the plants in the United States steadily increased from 144,354,000 barrels per annum in 1921 to 271,850,000 barrels in 1931. There was no further change reported in total capacity until 1934 when total plant capacity declined to 262,709,000 barrels per annum and continued to decline for the remainder of the period covered by this report.

The table also shows that the Pennsylvania-Dixie Cement Corporation utilized over 98 percent of its plant capacities during 1926, the year in which it was organized. During 1926 the total utilization of plant capacities for the whole cement industry was 77.4 percent. During the years 1928 to 1937, inclusive, the percent of plant utilization of the Pennsylvania-Dixie Cement Corporation was much less than for the industry as a whole. The Pennsylvania-Dixie Cement Corporation utilized but 70.8 percent of the total capacity of its plants during 1928, which declined to 33.3 percent before the end of 1937 while the percent of utilization for the total United States declined from 73.2 percent in 1928 to 46 percent in 1937.

The relative importance of the predecessor companies and the Pennsylvania-Dixie Cement Corporation is also set forth in the last column of the above-mentioned table, where it is shown that in 1921 the combined production of Pennsylvania-Dixie Cement Corporation's predecessors was 5.4 percent of the total United States production. The ratio of production of these companies is shown to have continued in approximately the same relation to total production and that shortly after Pennsylvania-Dixie Cement Corporation was organized in 1926, it produced a smaller percentage of the total cement production in the United States.

TABLE 12.—*Total annual cement production of the United States and production of the predecessor companies, 1921-25, and of the Pennsylvania-Dixie Cement Corporation, 1926-37, as related to capacities of each for the period 1921-37*

Year	Total United States			Predecessor companies, 1921-25— Penn-Dixie, 1926-37			Ratio of production of Penn- Dixie to total pro- duction
	Produc- tion ¹	Capacity ²	Percent of capacity utilized	Produc- tion	Capacity	Percent of capacity utilized	
							Percent
1921.....	99,381	144,354	68.8	5,401	(?)	-----	5.4
1922.....	115,679	146,203	79.1	5,589	(?)	-----	4.8
1923.....	138,732	161,858	85.7	6,586	(?)	-----	4.7
1924.....	150,777	175,100	86.1	7,420	(?)	-----	4.9
1925.....	163,388	195,000	83.8	8,419	(?)	-----	5.2
1926.....	166,635	215,300	77.4	9,813	10,000	98.1	5.9
1927.....	175,330	227,080	77.2	9,040	10,000	90.4	5.2
1928.....	178,509	243,702	73.2	8,643	12,200	70.8	4.8
1929.....	172,856	258,917	66.8	7,165	12,200	58.7	4.1
1930.....	162,989	270,044	60.4	6,437	12,200	52.8	3.9
1931.....	126,671	271,850	46.6	5,538	12,200	45.4	4.4
1932.....	77,198	271,850	28.4	3,502	12,200	28.7	3.5
1933.....	63,984	271,850	23.5	2,226	12,200	18.2	3.9
1934.....	78,419	262,709	29.9	3,075	12,200	25.2	3.9
1935.....	77,748	261,915	29.7	3,308	12,200	27.1	4.3
1936.....	114,469	255,504	44.8	4,069	12,200	33.4	3.6
1937.....	118,075	255,223	46.3	4,067	12,200	33.3	3.4

¹ Thousands of barrels (from Statistical Abstract of the United States).

² Estimated (from Mineral Yearbook, Bureau of Mines).

³ Not available.

CAPITAL EXPENDITURES

Table 13, which follows, presents in comparative form the annual capital expenditures and depreciation and depletion charges of the Pennsylvania-Dixie Cement Corporation from 1927 to 1938, inclusive. Capital expenditures for most of the years of the period fell considerably behind the loss in the value of the property and equipment as measured by the depreciation and depletion charges. In only 2 years of operations, 1927 and 1928, did the capital expenditures exceed the depreciation and depletion charges, regardless of whether such charges were computed with or without intangible value. The bulk of the capital expenditure in 1928 was for the acquisition of the Pyramid Portland Cement Co., whose plant and business were located in Iowa, far removed from the other plants and markets of the Penn-Dixie. This purchase obviously in no way altered or improved the existing plants of the Penn-Dixie. It is apparent from the table that from the close of 1928 very little money was reinvested in property and equipment. It is evident that these expenditures were insufficient to permit the company to introduce substantial economies through replacement of plant and equipment. In fact, these expenditures were insufficient to replace the plant and equipment existing at the time of the consolidation. Depreciation and depletion of tangible values exceeded capital expenditures by \$6,198,305 for the period 1927 to 1938, inclusive.

The fact that the management of the Penn-Dixie did not substantially alter its facilities or did not fully replace depreciated plant and equipment is no reflection in itself upon its managerial skill or ability. It simply means that no extensive changes were possible within the limits imposed by the capital expenditures as set forth in the following table.

TABLE 13.—*Capital expenditures, and depreciation and depletion, including and excluding intangibles, during the period 1927 to 1938, inclusive, for the Pennsylvania-Dixie Cement Corporation*

Year	Capital expenditures	Depreciation	
		Excluding intangibles	Including intangibles
1927.....	\$1,465,441.18	\$1,129,153	\$1,260,622
1928.....	¹ 1,930,577.07	1,278,769	1,384,785
1929.....	386,245.00	1,311,382	1,395,916
1930.....	623,436.00	1,246,910	1,379,289
1931.....	105,002.69	1,224,630	1,393,129
1932.....	67,995.91	1,122,564	1,382,402
1933.....	205,249.17	996,755	1,376,879
1934.....	171,641.83	886,296	1,355,578
1935.....	16,441.27	814,236	1,375,735
1936.....	175,004.38	681,101	1,367,661
1937.....	153,852.58	585,472	585,472
1938.....	143,123.93	513,048	513,048
Total.....	5,592,011.01	11,790,316	14,770,516

¹ Includes \$1,294,265.81 representing purchase price of the Pyramid Portland Cement Co.

While available records of the predecessor companies are not sufficiently detailed to show accurately either capital expenditures or the increase in productive capacity, the balance sheet increases in fixed assets from year to year indicate that earnings were reinvested. Balance sheets for the Penn Allen Cement Co. and the Cayuga Operating Co., a subsidiary of the Pennsylvania Cement Co., are lacking for 1921 and 1922. Total net assets for the other predecessor companies, which constitute the bulk of the investment in fixed assets by the predecessor companies, show little change for these 2 years. The remaining 3 years showed steady increases. The investment in fixed assets in 1923 for all companies with the exception of Penn Allen, after deduction of depreciation and depletion, amounted to \$7,874,625. Assuming that the net investment of Penn Allen in fixed assets was the same in 1923 as it was in 1924, net investment for all predecessor companies amounted to approximately \$9,100,000. In 1924, net investment in fixed assets increased to \$11,500,000. In 1925 there was a further increase of approximately \$1,260,000. This raised the total of net fixed assets to \$12,760,000. The increase in fixed assets was reflected in increase in productive capacity. Chairman Richard Hardy of the Penn-Dixie stated in September 1926 that the annual capacity of the predecessor companies was increased by more than 3,000,000 barrels during the period 1923 to July 31, 1926, inclusive.

In a discussion concerning the operating efficiency of the predecessor companies, one of the officers of the Pennsylvania-Dixie Cement Corporation said that these companies had brought their plants and equipment to an excellent state of efficiency at the time of the consolidation.

RATIO OF NET SALES TO INVESTED CAPITAL FOR PENNSYLVANIA-DIXIE CEMENT CORPORATION AND PREDECESSOR COMPANIES

Table 14, presented below, shows the capital turn-over in terms of sales for the predecessor companies, for the period 1921 to 1925, inclusive, and for the Pennsylvania-Dixie Cement Corporation for

the years 1927 to 1938, inclusive. Capital turn-overs based on invested capital, both including and excluding intangibles, are shown for the Penn-Dixie Cement Corporation. This ratio expresses the number of times which the money value of the invested capital is converted into cash or its equivalent in a year. Other factors being equal, the more rapidly the invested capital revolves the greater will be the profits.

The table shows the wide variation in the rate of capital turn-over of the predecessor companies. Except for 1921, rates for the Clinchfield and the Dixie were similar. Both companies turned over their invested capital on the average a little more than 6 percent. The rates of both of these companies fluctuated little from year to year. Rates of the Pennsylvania Cement Co., while more erratic, were substantially greater than for the two companies mentioned above. This company was able generally to turn its invested capital more than once each year. The rates of the Dexter Portland were rather similar to those of the Pennsylvania Co., though their range of fluctuation was less.

TABLE 14.—*Capital turn-over in terms of sales for the Pennsylvania-Dixie Cement Corporation, 1927-38, and for the predecessor companies for the period 1921 to 1925, inclusive*

Year	Penn-Dixie Cement Corporation			Predecessor companies				
	Exclud- ing in- tangibles	Includ- ing in- tangibles	Total	Clinch- field Portland Cement Corpora- tion	Dexter Portland Cement Co.	Pennsyl- vania Ce- ment Co.	Dixie Portland Cement Co.	Penn Al- len Ce- ment Co.
1921			85.17	72.76	115.39	128.04	59.74	
1922			88.83	81.53	106.89	98.53	62.55	
1923			89.62	65.38	98.04	95.13	61.88	
1924			86.43	61.60	103.39	113.73	64.12	112.13
1925			83.34	61.03	103.95	105.57	62.41	
1926								
1927	60.85	37.20						
1928	59.29	36.72						
1929	50.24	30.79						
1930	44.96	27.71						
1931	35.91	21.24						
1932	22.91	13.04						
1933	19.83	10.98						
1934	34.91	19.39						
1935	40.09	22.22						
1936	50.45	28.96						
1937	50.95							
1938	51.35							

† Invested capital of Cayuga Operating Co., principal subsidiary of the Pennsylvania Cement Co., estimated for this year.

The experience of Penn-Dixie in respect to the rate of capital turn-over has not been as satisfactory as those of the predecessor companies. The rate of turn-over of invested capital for the Penn-Dixie, excluding intangible values, was highest in 1927 when a rate of approximately 61 percent was realized. Capital turn-over slowed up for each of the succeeding 6 years, so that in 1933 the rate of turn-over was but 20 percent. From this low, rates were quickened, and for the 3 years, 1936-38, rates held close to 50 percent. Rates based on invested capital including intangibles are slightly in excess of 50 percent of rates computed on the basis of invested capital not including intangibles

arising at the time of the consolidation in 1926. Rates on both bases are the same for 1937 and 1938, as the Pennsylvania-Dixie Cement Corporation in the beginning of 1937 wrote off all remaining intangible values. It will be observed that at no time did the rates based on intangibles rise above 37 percent. In 1933, the low point in the life cycle of the Penn-Dixie, the rate of turn-over dropped to .11 percent. In other words at this rate it would require 9 years for the company to turn over its invested capital.

Table 15 presents the annual production of the predecessor companies by individual companies for the years 1921 to 1925, inclusive. The production of cement provides a good measure of the relative importance which each individual company bore to the group. The Pennsylvania Cement Co. was until 1925 much the largest company. However in that year the Dexter Portland Cement Co. acquired the Penn Allen Cement Co., and the combined production of these companies approached the Pennsylvania Cement Co. in size.

TABLE 15.—*Annual production of cement for the predecessor companies of Pennsylvania-Dixie Cement Corporation, 1921-25*

BARRELS OF CEMENT

Production	1921-25	1921	1922	1923	1924	1925
Clinchfield Portland Cement Corporation.....	6,303,418	982,691	1,076,737	1,259,667	1,340,981	1,643,342
Dexter Portland Cement Co.....	6,284,779	922,124	813,550	948,375	1,227,230	2,373,500
Pennsylvania Cement Co.....	10,244,164	1,807,500	1,705,200	2,169,000	2,422,000	2,761,000
Dixie Portland Cement Co.....	6,910,915	1,148,263	1,286,425	1,407,639	1,427,410	1,641,178
Penn Allen Cement Co.....	2,510,275	540,776	707,150	801,025	1,002,160	.....
Total.....	32,253,551	5,401,354	5,589,062	6,585,706	7,419,721	8,419,020

REASONS FOR THE CONSOLIDATION

The fact that the consolidation did not develop important economies is not at all strange. The reason leading to the grouping together of the predecessor companies was not primarily one of increasing the efficiency of the combined properties. Mr. John A. Miller, and Mr. George Kilian, president, and secretary and treasurer, respectively, of the Pennsylvania-Dixie Cement Corporation, both of whom were active in the negotiations resulting in the consolidation, stated that to the best of their knowledge, the idea for the consolidation originated with the banking syndicate, who, they believe, approached the various companies with attractive offers for their assets. The opportunity for profit in the flotation of securities supplied ample reason for the consolidation. The bankers were the promoters, and occupied the center of the stage. It was they who bargained with the various parties and reconciled their conflicting interests. We have already seen that the bankers cleared, subject to the costs of distribution, approximately \$5,400,000.

The opportunity to capitalize intangible value was undoubtedly a very potent force in the consolidation, both from the point of view of the bankers and of the stockholders of the predecessor companies.

The predecessor companies were all earning handsome rates of return on invested capital. The businesses, on a going concern basis, were worth more than the book value of the properties. However, the stockholders' opportunity of disposing of this value through the

sale of their securities on the open market was limited. The proposition of the bankers presented them with the possibility of converting their holdings into cash on a very attractive basis.

The above reasons, of course, were of little appeal to the investor who purchased the securities of the new company through the distributing channels of the bankers. The principal reason advanced in the prospectuses offering Penn-Dixie securities for sale was the need of working capital for the new company. However, the Pennsylvania-Dixie Cement Corporation received from the sale of its securities only \$5,000,000 more cash than was possessed by the combined predecessor companies. Not all of this was available for use as working capital, for \$2,200,000 was earmarked for the retirement of a like amount of 6 percent bonds of the Dexter Portland Cement Co. Further than this, the remaining \$3,000,000 was not long enjoyed by the Penn-Dixie as working capital. In 1928 the Penn-Dixie spent approximately \$1,300,000 in cash to acquire the Pyramid Portland Cement Co. The need for working capital apparently was not a very powerful motive for the consolidation.

EXHIBIT No. 1

AGREEMENT, made this 24th day of July 1926, by and between THE SECURITIES COMPANY and JOHN B. DENNIS, individually, and as a Committee of the holders of the Common Stock of Clinchfield Portland Cement Corporation (hereinafter called "Committee"), parties of the first part, and THE NATIONAL CITY COMPANY, a corporation organized under the laws of the State of New York, and HEMPHILL, NOYES & COMPANY, a copartnership doing business in the City and State of New York (hereinafter called "Syndicate"), parties of the second part, and THE NATIONAL CITY BANK OF NEW YORK, a national banking corporation (hereinafter called the "Depository"), party of the third part, WITNESSETH:

That in consideration of the premises and of the mutual agreements and undertakings herein contained and of the payment by the Syndicate to the Committee of the sum of Ten Dollars (\$10) in cash, receipt of which is hereby acknowledged, the parties hereto hereby agree as follows:

I. The Committee represents—

(a) That Clinchfield Portland Cement Corporation (hereinafter called "Clinchfield Company") owns and operates plants for the manufacture of Portland Cement in or near the Cities of Kingsport, Tennessee, and Clinchfield, Georgia, and also owns free and clear of any lien or charge all the issued and outstanding shares of the capital stock of Marceum Quarries Corporation, a corporation of the State of —

(b) That attached hereto and marked Exhibit "A", is a true copy of the consolidated balance sheet of Clinchfield Company and its said subsidiary, and that said balance sheet correctly sets forth the financial condition of said companies as of the close of business on May 31st, 1926.

II. The Syndicate agrees to use its best efforts to cause to be organized a corporation (hereinafter called "Consolidated Company") for the purpose of acquiring, directly or indirectly, the assets of Clinchfield Company and of its said subsidiary, and the assets of certain other cement companies, including all or some of the following companies: Dexter Portland Cement Company, a Pennsylvania corporation, and its subsidiaries, Dixie Portland Cement Company, a West Virginia corporation, and its subsidiaries, and Pennsylvania Cement Company, a Pennsylvania corporation, and its subsidiaries. The Consolidated Company may be organized as a new corporation with such name and under the laws of such state as the Syndicate may deem desirable, or it may be created through the consolidation of one or more of the above mentioned companies, or through the amendment of the charter of any one of them to provide for the capital structure below outlined.

The capital of the Consolidated Company shall consist of an authorized issue of \$20,000,000 par value of Preferred Stock bearing cumulative dividends at the rate of 7% per annum and redeemable at not exceeding \$115 per share, of which (except as below provided) not more than \$13,000,000 par value shall be outstanding at the completion of the consolidation; and an authorized issue of 1,000,000 shares of Common Stock having no par value, of which not more than 400,000

shares shall be outstanding at the completion of the consolidation. The Consolidated Company will also authorize an issue of not exceeding \$20,000,000 of bonds bearing interest at not exceeding 6% per annum, and maturing not more than twenty years from their date, of which not more than \$13,000,000 will be outstanding at the completion of the consolidation. Should the face amount of bonds outstanding at the completion of the consolidation be reduced below \$13,000,000, the amount of Preferred Stock then outstanding may be increased by an amount equivalent to such reduction.

III. The Committee agrees to use its best efforts to cause all holders of the Common Stock of Clinchfield Company to deposit their shares with The National City Bank of New York as Depositary, under this Agreement, with proxies or powers of attorney running to the Committee, in form sufficient to authorize the Committee to vote for a transfer of the assets of Clinchfield Company to the Consolidated Company, or a dissolution of the Clinchfield Company and to take any other action, corporate or otherwise, which may be necessary or desirable to carry out the terms of this Agreement.

The shares of the Clinchfield Company so deposited shall be held by the Depositary subject to the terms and provisions of this Agreement. Unless, within one hundred and twenty (120) days from the date of this Agreement, there shall have been deposited with the Depositary the securities and/or cash specified in Article IV of this Agreement as the purchase price to be paid by the Consolidated Company for the assets and properties of Clinchfield Company, the Depositary, upon the expiration of said one hundred and twenty (120) days, shall return the shares of stock of Clinchfield Company deposited with it hereunder to the persons or companies depositing the same respectively. In the event that said securities and/or cash specified in Article IV of this Agreement are deposited with the Depositary within said period of one hundred and twenty (120) days from the date hereof, the Depositary shall deliver the shares of stock of the Clinchfield Company deposited with it to or upon the order of the Committee.

IV. The Committee agrees subject to its being able to obtain the deposit of not less than 75% of the shares of the Common Stock of Clinchfield Company in the manner aforesaid, forthwith upon request of the Syndicate to cause Clinchfield Company to sell, assign, transfer and deliver to the Consolidated Company, all its assets and properties of every character and description, including all stock or assets of its subsidiaries and all trade-marks, trade-names and goodwill, and to receive in full payment therefor securities of the Consolidated Company of the character above described as follows: \$2,875,000 in bonds, at their face value, 25,875 shares of Preferred Stock, 51,111.11 shares of Common Stock; provided that if the net current assets of Clinchfield Company as of July 31, 1926, as determined by the auditors selected by the Syndicate, and after redemption of its preferred stock, shall be less than \$1,150,000, then, and in that event, the face value of the bonds which Clinchfield Company shall be entitled to receive in part payment of its assets shall be reduced by the amount, if any, that said net current assets of Clinchfield Company determined as above provided shall be less than \$1,150,000; provided, however, that if said net current assets of Clinchfield Company determined as above provided and after redemption of its preferred stock shall be in excess of \$1,150,000, an amount equivalent to such excess shall be paid to Clinchfield Company in addition to the securities above mentioned.

V. The Syndicate agrees, subject to the conditions hereinafter set forth, to cause said Consolidated Company to purchase and acquire all of the assets of Clinchfield Company, and to make payment therefor to Clinchfield Company in the securities of the Consolidated Company as hereinabove set forth, and to cause said Consolidated Company to enter into a contract with Clinchfield Company for the assumption by the Consolidated Company of all liabilities of Clinchfield Company shown on the annexed balance sheet as well as any obligation incurred for moneys borrowed as provided in paragraph (4) of this Article V; provided:

(1) That the Consolidated Company will be able, in the opinion of the Syndicate, to acquire the assets and properties of other companies mentioned in the foregoing Article II of this Agreement, in a manner and on a basis satisfactory to the Syndicate.

(2) That the earnings and financial condition of all of said companies, including Clinchfield Company, when checked by independent auditors approved by the Syndicate, will be in substantial accord with the representations with respect thereto which have been made to the Syndicate; and that a report by Messrs. Ford, Bacon & Davis, Engineers, appointed by The Syndicate for the purpose of making a survey of the properties of said companies, will in all respects be satisfactory to the Syndicate.

(3) That no substantial defects will appear in the titles to any of the properties of any of said companies;

(4) That from May 31, 1926, the date of the balance sheet hereto annexed, to the date of the transfer of the assets of Clinchfield Company to the Consolidated Company, no dividend or distribution of assets shall have been declared or paid to the Stockholders of Clinchfield Company, except the regular dividends on its Preferred and Common Stock, payable prior to August 1, 1926, at the current rate, and that after July 31, 1926, no dividend or distribution of assets shall have been declared or paid to Stockholders, unless the aggregate amount of such dividend or distribution shall have been set forth as a current liability on the balance of the Clinchfield Company as of July 31, 1926; and that no substantial expenditure of funds or dissipation of assets has taken place, except as may have been required in the regular and usual course of business; except that the Company may redeem all of its Preferred Stock outstanding on May 31, 1926, and borrow all or any part of the amount required for this purpose.

(5) That the legality and validity of the merger or acquisition of said companies and of all matters relating to their combination or merger shall be approved by counsel selected by the Syndicate;

(6) That there shall be no substantial decline in the general market for industrial securities of the character to be issued by the Consolidated Company.

VI. In the event of the consolidation becoming effective, the Committee agrees forthwith to take all necessary action to effect the distribution to the stockholders of Clinchfield Company of the securities of the Consolidated Company received by it; provided that the securities of the Consolidated Company to which stockholders represented by the Committee are entitled shall be forthwith deposited with the Depositary, subject to the order of the Committee, pursuant to the terms and provisions hereof.

The Committee hereby agrees to sell to the Syndicate

(a) All bonds of the Consolidated Company so deposited; and

(b) All shares of the Common and Preferred Stocks of the Consolidated Company so deposited, less such number of shares of said Common and/or Preferred Stocks as the Committee shall notify the Syndicate of its election to retain as hereinbelow provided.

Notice of its election to retain any portion of the said Common or Preferred Stocks of the Consolidated Company shall be given by the Committee to the Syndicate not later than fifteen (15) days from the date of this Agreement, shall be in writing signed by the Committee and shall specify the number of said shares of Common and/or Preferred Stocks sold to the Syndicate, and the number of shares of said stocks which the Committee has elected to retain.

The Syndicate hereby agrees to purchase from the Committee the securities described in (a) and (b) above and to make payment therefor by depositing with The National City Bank of New York to the order of the Committee, the following amounts in cash, viz:

For each bond of the Consolidated Company so purchased an amount equal to the face value thereof without interest;

For each share of Preferred Stock of the Consolidated Company so purchased an amount equal to the par value thereof;

For each share of the Common Stock of the Consolidated Company so purchased, Forty-five Dollars (\$45).

The Syndicate also agrees to deposit with the Depositary to the order of the Committee $\frac{1}{2}$ share of Preferred Stock for each share of Preferred Stock which the Committee has elected to retain, and $\frac{1}{4}$ share of Common Stock for each share of Common Stock which the Committee has elected to retain.

VII. In consideration of said deposit by the Syndicate the Committee agrees to deposit all certificates representing such Common and Preferred Stocks with the Depositary, and that it will not sell or dispose of any of said stocks or permit any of said stocks to be sold or disposed of for a period of six (6) months from the day of their delivery to the Depositary without the consent in writing of the Syndicate first had and obtained, and will not for a further period of six (6) months sell or dispose of any of said stocks or permit any of said stocks to be sold or disposed of without being first offered to the Syndicate at the prices at which it may be desired to offer the same for sale. Said stocks shall be held by the Depositary under such deposit agreement or deposit agreements or receipts as may be necessary, appropriate, or desirable to carry out the provisions of this Article VII.

VIII. The fees and expenses of the Depositary and all expenses in connection with the transfer of assets of Clinchfield Company shall be borne by the Consolidated Company, and all proceedings relating thereto shall be supervised by counsel for the Syndicate whose charges and disbursements shall likewise be paid by the Consolidated Company.

IX. All notices or requests provided to be given to the Committee shall be sufficiently given if sent by registered mail, postage prepaid, to The Securities Company, at 24 Broad Street, New York City, and any notice so mailed shall be conclusively deemed to be received by the Committee. All notices required to be given or filed with the Syndicate shall be sufficiently given or filed if delivered to The National City Company at its office No. 55 Wall Street, New York City.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

[Seal]

THE SECURITIES COMPANY,
By H. R. DENNIS, *Vice President*.

Attest:

WARREN P. EATON,
Secretary.

JOHN B. DENNIS. [L. S.]

[Seal]

THE NATIONAL CITY COMPANY,
By STANLEY A. RUSSELL, *Vice President*.

Attest:

F. J. MAGUIRE,
Asst. Secretary.

HEMPHILL, NOYES & Co. [L. S.]

[Seal]

THE NATIONAL CITY BANK OF NEW YORK,
By SHERMAN ALLEN, *Trust Officer*.

Attest:

H. D. HALL,
Assistant Cashier.

EXHIBIT "A"

*Clinchfield Portland Cement Corporation and Marceon Quarries Corporation,
Consolidated balance sheet—May 31, 1926*

ASSETS

Current assets:

Cash in banks and on hand		\$673, 776. 83
Notes receivable		8, 322. 23
Customers' accounts receivable		
less reserve of \$4,690.79	\$240, 277. 29	
Advances to officers and employees	19, 206. 35	
Due on stock subscriptions	17, 650. 02	
Other accounts receivable	8, 247. 81	
		285, 381. 47

Inventories, at cost or market
whichever is lower, as certified
by responsible officials:

Cement	98, 194. 69
Raw materials, supplies and work in process	507, 753. 62

605, 948. 31

\$1, 573, 428. 84

Deferred charges to future operations:

Prepaid insurance, royalties and other expenses	31, 422. 20
Stripping and development expenses, less amount written off	9, 541. 55

40, 963. 75

14, 500. 00

Miscellaneous investments

Property account:

Land, buildings, machinery and equipment	\$4, 79, 870. 11
Less—Reserves for amortization, depreciation and depletion	65, 517. 09

3, 214, 353. 02

4, 843, 245. 61

*Clinchfield Portland Cement Corporation and Marcem Quarries Corporation,
Consolidated balance sheet—May 31, 1926—Continued*

LIABILITIES	
Current liabilities:	
Notes payable.....	\$210, 501. 78
Accounts payable.....	89, 261. 36
Accrued wages, taxes, and other expenses..	97, 551. 89
Provision for Federal income taxes.....	176, 331. 13
	<hr/>
	\$573, 646. 16
Reserve for maintenance of railroad hopper cars.....	7, 802. 91
Capital stock:	
7 percent cumulative preferred: Authorized and issued, 10,000 shares of \$100 each.....	\$1, 000, 000. 00
Less—Held in treasury, 436 shares of \$100 each.....	43, 600. 00
	<hr/>
	\$956, 400. 00
Common: Authorized 50,000 shares without par value:	
Outstanding, shares.....	24, 344
Reserved to exchange for old shares not surrendered, shares.....	80
	<hr/>
Total, shares.....	24, 424
	<hr/>
Subscriptions to 576 shares of common stock, partly paid.....	57, 600. 00
	<hr/>
	1, 700, 633. 46
	<hr/>
	2, 657, 033. 46
Surplus:	
Appropriated for retirement of preferred stock, less premiums on stock purchased, etc.....	44, 456. 79
Unappropriated surplus.....	1, 560, 306. 29
	<hr/>
	1, 604, 763. 08
	<hr/>
	4, 843, 245. 61

EXHIBIT No. 2

AGREEMENT made this — day of —, 1926, by and between certain stockholders of PENNSYLVANIA CEMENT COMPANY, a Pennsylvania corporation, who have become parties hereto by signing this Agreement (hereinafter called "Stockholders"), parties of the first part, THE NATIONAL CITY COMPANY, a corporation organized under the laws of the State of New York, and HEMPHILL, NOYES & COMPANY, a copartnership doing business in the City and State of New York (hereinafter called "The Syndicate"), parties of the second part, and THE NATIONAL CITY BANK OF NEW YORK, a national banking corporation (hereinafter called the "Depository"), party of the third part, WITNESSETH:

I. Stockholders represent—

(a) That Pennsylvania Cement Company owns and operates a plant for the manufacture of Portland cement in or near Bath, Pennsylvania, and also owns free of any lien or charge all the issued and outstanding shares of the capital stock of Cayuga Operating Company, Inc., a corporation of the State of New York.

(b) That attached hereto marked "Exhibits 'A' and 'B'," respectively, are true copies of the balance sheets of said Pennsylvania Cement Company and said Cayuga Operating Company, Inc., and that said balance sheets correctly set forth the respective financial conditions of said companies at the close of business on May 31, 1926.

Stockholders make the foregoing representations believing them to be in all respects in accordance with the existing facts but it is understood that they are to incur no personal liability, either individually or collectively, on account of such representations.

II. The Syndicate agrees to cause to be organized a corporation (hereinafter called "Consolidated Company", which shall acquire, directly or indirectly, the assets of the said Pennsylvania Cement Company and of its said subsidiary, and the assets of certain other cement companies, including all or some of the following companies: Dexter Portland Cement Company, a Pennsylvania corporation, and its subsidiaries, Clinchfield Portland Cement Corporation, a Virginia corporation and its subsidiaries, and Dixie Portland Cement Company, a West Virginia corporation, and its subsidiaries. The Consolidated Company may be organized as a new corporation with such name and under the laws of such state as The Syndicate may deem desirable, or it may be created through the consolidation of one or more of the above-mentioned companies, or through the amendment of the Charter of any one of them to provide for the capital structure below outlined.

The capital of the Consolidated Company shall consist of an authorized issue of \$20,000,000 par value of Preferred Stock bearing cumulative dividends at the rate of 7% per annum and redeemable at not exceeding \$115 per share, of which (except as herein otherwise provided) not more than \$13,000,000 par value shall be outstanding at the completion of the consolidation; and an authorized issue of 1,000,000 shares of Common Stock having no par value, of which not more than 400,000 shares shall be outstanding at the completion of the consolidation. The Consolidated Company will also authorize an issue of not exceeding \$20,000,000 of bonds bearing interest at not exceeding 6% per annum, and maturing not more than twenty years from their date, of which not more than \$13,000,000 will be outstanding at the completion of the consolidation. Should the face amount of bonds outstanding at the completion of the consolidation be reduced below \$13,000,000, the amount of Preferred Stock then outstanding may be increased by an amount equivalent to such reduction.

III. The Stockholders agree forthwith upon the agreement of purchase on behalf of The Syndicate (herein set forth) becoming effective, either by declaration of The Syndicate or by lapse of time as hereinafter provided, to cause Pennsylvania Cement Company to sell, assign, transfer, and deliver all of its assets and properties, of every character and description, including trade-marks, trade names, and goodwill, and all the capital stock or assets of its subsidiary companies to the Consolidated Company, upon deposit with the Depositary as hereinafter provided for the account of Stockholders of securities of the Consolidated Company of the character above described as follows: \$3,703,703.70 in bonds, 34,904.01 shares of Preferred Stock, 88,888.89 shares of Common Stock.

IV. The Syndicate agrees to cause the Consolidated Company to purchase all the above assets and properties of the Pennsylvania Cement Company and its subsidiary, and to issue and deliver to the Depositary for the account of Stockholders in payment therefor the securities of the Consolidated Company in the amounts above set forth, and to cause said Consolidated Company to enter into a contract with the Pennsylvania Cement Company for the assumption by the Consolidated Company of all obligations and/or liabilities of the Pennsylvania Cement Company and its subsidiaries.

V. This Agreement shall be subject to the following conditions:

The earnings and financial condition of the Pennsylvania Cement Company and of the Cayuga Operating Company, Inc., when checked by independent auditors approved by The Syndicate will be in substantial accord with the balance sheets of said Pennsylvania Cement Company and said Cayuga Operating Company, Inc., hereto attached marked "Exhibit 'A' and Exhibit 'B'", respectively, and a report by Messrs. Ford, Bacon & Davis, Engineers, appointed by The Syndicate for the purpose of making a survey of the properties of the said two companies, will be in all respects satisfactory to The Syndicate; and the Consolidated Company will be able, in the opinion of The Syndicate, to acquire, in a manner and on a basis satisfactory to The Syndicate the assets and properties of other companies mentioned in the foregoing Article II of this Agreement.

No defects will appear in the titles to any of the properties of any of said companies of a character sufficiently serious in the opinion of The Syndicate to render any of said companies unavailable for the consolidation.

There shall be no substantial decline in the general market for industrial securities of the character to be issued by the Consolidated Company.

VI. Unless within sixty (60) days from the date of this Agreement, The Syndicate shall give written notice to the Stockholders that one or more of the above conditions have not been complied with to its satisfaction, all of said conditions shall be deemed to have been fulfilled in a manner satisfactory to The Syndicate and The Syndicate thereupon, and within one hundred and twenty (120) days from the date hereof, agrees to carry out and complete said proposed consolidation and to purchase from the Stockholders the securities of the Consolidated Company received by them as herein set forth; provided that from May 31, 1926, the date of the balance sheets hereto annexed, to the date of the transfer of the assets of the Pennsylvania Cement Company to the Consolidated Company or until the purchase of and payment for the stock in the Pennsylvania Cement Company owned by the Stockholders as hereinafter provided, no dividends or distribution of assets has been declared or paid to the Stockholders by said Company except dividends at the rate of five percent (5%) per month and that no substantial expenditures of funds or dissipation of assets of said Company or of its subsidiaries has taken place except such expenditures as may be required in the regular and usual course of business and for new constructions deemed desirable to provide for the expansion of its business. The Syndicate may, however, at any time subsequent to the agreement of purchase on behalf of The Syndicate (herein set forth) becoming effective, either by declaration of The Syndicate or by lapse of time as hereinbefore provided in this paragraph, and within one hundred and fifteen (115) days from the date hereof, notify Stockholders in writing that all of said conditions have been fulfilled to their satisfaction and demand the deposit by Stockholders of all stock of Pennsylvania Cement Company issued and outstanding duly endorsed in blank with signatures guaranteed or otherwise satisfactorily authenticated, with The National City Bank of New York, party of the third part, as Depositary, together with irrevocable proxies or powers of attorney running to The Syndicate or its nominee, or nominees in such form as may be requested by The Syndicate to enable said shares to be transferred and/or voted in favor of any corporate action required or deemed advisable by counsel to The Syndicate to effect the consolidation herein outlined, and any other corporate action incident thereto or consequent thereon, and Stockholders shall thereupon be obligated to make such deposit of all such shares within five (5) days of the date of such demand. The shares of the Pennsylvania Cement Company so deposited shall be held by the Depositary subject to the terms and provisions of this agreement and the Depositary shall issue, subject to the same terms and conditions, negotiable receipts for such shares to each of such Stockholders in the form hereto annexed marked "Exhibit 'C'."

The transfer by The Syndicate of any of the shares deposited by the Stockholders under the provisions of this paragraph shall not deprive such Stockholders of their right to dividends at the rate of five percent (5%) per month from May 31, 1926, to the date when the securities of the Consolidated Company are received by the Depositary or the purchase price for their stock in the Pennsylvania Cement Company is otherwise paid as hereinafter provided.

VII. All securities of the Consolidated Company to be issued in payment for the assets of the Pennsylvania Cement Company shall be deposited as soon as practicable, and in any event on or before one hundred and twenty (120) days from the date of this Agreement, with the Depositary for the account of Stockholders in the proportions to which they are entitled to the same according to the number of and in exchange for the shares of the stock of the Pennsylvania Cement Company deposited by them respectively.

The Stockholders by signing this Agreement hereby severally agree to sell to The Syndicate and The Syndicate hereby agrees to purchase from the Stockholders all of said securities immediately upon the deposit thereof and to pay to each Stockholder for the securities to which he is entitled the following amounts in cash: for bonds of the Consolidated Company 90% of the face value thereof without interest; for Preferred Stock of the Consolidated Company at the rate of \$95.50 per share on a par value of \$100; for Common Stock of the Consolidated Company at the rate of \$37.50 per share; *provided, however*, that Stockholders shall have the privilege of retaining any portion of the securities of the Consolidated Company to which they are entitled respectively and which they may not desire to sell, by giving notice to The Syndicate, as herein provided, setting forth the principal amount of bonds and the number of shares and class or classes of stock which they elect to retain. Such notice shall be in writing signed by the Stockholders who desire to retain any of said securities, and shall set forth the number and character of the securities desired to be retained and shall be deemed duly given if filed with The Syndicate not more than ten (10) days after the copy of the reports of the independent auditor employed by The Syndicate and of Messrs. Ford, Bacon & Davis provided for in Paragraph V of this Agreement covering the

companies to be included in the consolidation other than Pennsylvania Cement Company and its subsidiaries have been delivered at the office of the Pennsylvania Cement Company, 131 East 46th Street, New York City, N. Y. Any of the Stockholders failing to file any such notice within the time specified shall be conclusively deemed to have elected to sell all of the securities of the Consolidated Company received by them for cash and at the prices above stated.

In the event that the purchase by The Syndicate becomes effective and that for any reason the securities of the Consolidated Company to be received by Stockholders in payment for the assets of the Pennsylvania Cement Company and its subsidiaries shall not have been deposited with the Depositary for the account of Stockholders, as herein provided (which deposit shall not be deemed to be complete unless and until the execution and delivery by the Syndicate to the Depositary of the certificate provided for in subdivision (b) of Article VIII of this Agreement), on or before one hundred and twenty (120) days from the date hereof, then, and in such event, The Syndicate shall forthwith upon the expiration of said one hundred and twenty (120) days purchase from the Stockholders and the Stockholders shall sell to The Syndicate all the said stock of the Pennsylvania Cement Company, and The Syndicate shall pay to the Stockholders in payment for their respective shares in the Pennsylvania Cement Company the sum of \$10,000,000. Such payment shall be payable proportionately to each Stockholder at the office of the Depositary on the surrender by each such Stockholder of his or her stock properly endorsed for delivery or upon the surrender of his or her receipt for such stock issued by the Depositary properly endorsed for delivery.

Every Stockholder signing this Agreement agrees for himself that, in case he elects to retain any securities in accordance with the provisions of this paragraph, he will not for a period of six (6) months from the date of their delivery to him, sell or dispose of any of said securities so retained by him without the written consent of The Syndicate and, for a further period of six (6) months, will not sell or dispose of any of said securities without first offering them to The Syndicate at the price at which he then proposes to offer such securities for sale. Nothing herein contained, however, shall prevent any transfer by the executor of any estate, a party hereto, to the beneficiaries of such estate.

VIII. Whenever there shall be delivered to the Depositary

(a) Securities (in definitive or temporary form) of the Consolidated Company, viz: \$3,703,703.70 face value of bonds of said Company, 34,904.01 shares of its Preferred Stock, and 88,888.89 shares of its Common Stock.

(b) A certificate, signed by the President, a Vice President or Secretary of Pennsylvania Cement Company, and by The Syndicate, setting forth: (1) that the securities so delivered to the Depositary are the securities of the Consolidated Company contemplated by this Agreement, (2) the amount and classes of such securities to which each of the Stockholders is entitled, (3) the amount and classes of such securities which each of the Stockholders has agreed to sell to The Syndicate, and (4) the amount and classes of such securities which each of the Stockholders desires to retain, the Depositary shall deliver to or upon the order of The Syndicate all shares of stock of Pennsylvania Cement Company deposited with it, and shall also deliver to or upon the order of The Syndicate, upon receipt of payment therefor at the prices hereinabove provided, all the securities of the Consolidated Company agreed to be sold by the Stockholders to The Syndicate, and shall distribute to the Stockholders the cash payable to them and/or the securities retained by them.

The Depositary shall be entitled to rely absolutely upon the above-mentioned certificate for any action taken hereunder, and shall be protected and held harmless for all things done or omitted by it in good faith, and shall be liable only for its own wilful default or misfeasance.

IX. All notices provided to be given to Stockholders shall be sufficiently given if sent by registered mail, postage prepaid, to Pennsylvania Cement Company at 131 East 46th Street, New York City, New York, and any notice so mailed shall be conclusively deemed to be received by each of the Stockholders. All notices or statements required to be given to or filed with The Syndicate shall be sufficiently given or filed if delivered to The National City Company, at its office No. 55 Wall Street, New York City.

X. The Syndicate agrees that all expenses in connection with the transfer of assets and dissolution of the Pennsylvania Cement Company, including the fees of the Depositary and all expenses in connection with the transfer of shares and negotiable receipts, including all Federal and State revenue stamps, will be borne by the Consolidated Company and all proceedings will be supervised by counsel

for The Syndicate whose charges and disbursements shall likewise be paid by the Consolidated Company.

XI. This Agreement shall not be assignable by The Syndicate until the agreement of purchase by The Syndicate shall become effective either by declaration of The Syndicate or by lapse of time as herein provided.

XII. This Agreement may be executed in one or more counterparts, all of which shall constitute but one and the same instrument and shall bind and benefit the several parties hereto and their survivors, heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

By _____, *THE NATIONAL CITY COMPANY,*
Vice President.

Attest:
_____, *Secretary.*

By _____, *THE NATIONAL CITY BANK OF NEW YORK,*
Vice President.

Attest:
_____, *Assistant Cashier.*

EXHIBIT "A"

Pennsylvania Cement Co., balance sheet, May 31, 1926

ASSETS

Capital assets:

Plant.....	\$2, 526, 087. 99
Construction.....	53, 808. 51
Real estate.....	112, 286. 15
Barges.....	60, 904. 68
Automobiles.....	27, 291. 37
Furniture and fixtures.....	7, 021. 02
N. Y. office building.....	48, 827. 59

Total..... \$2, 836, 227. 31

Stores and material:

Coal.....	\$53, 107. 20
Gypsum.....	2, 672. 80
Cotton bags, Pa.....	27, 732. 13
Cotton bags, Cayuga.....	11, 432. 26
Supplies.....	141, 471. 59
Paper bags, Pa.....	6, 686. 63
Paper bags, Cayuga.....	3, 465. 48

Total..... 246, 568. 09

Current assets:

Bulk cement stock.....	\$164, 654. 61
White cement stock.....	464. 00
Lumnite cement stock.....	60. 00
Accounts receivable cement.....	423, 380. 74
Sundry accounts.....	3, 571. 58
Notes receivable.....	843, 320. 40
Cash.....	374, 205. 81
Cash advances.....	3, 834. 81
Cash advances account com.....	1, 900. 06

Total..... 1, 815, 392. 01

Investment account..... 161, 508. 30

Unexpired insurance..... 12, 384. 44

Accrued taxes..... 12, 990. 25

Cayuga Power Co. bonds..... 50, 396. 00

Cayuga Cement Co. bonds..... 18, 500. 00

Cayuga Operating Co., Inc..... 119, 545. 11

5, 273, 511. 51

Pennsylvania Cement Co., balance sheet, May 31, 1926—Continued

LIABILITIES

Capital stock issued.....		\$1, 250. 000. 00
Reserves:		
Depreciation—Plant.....	\$1, 556, 265. 05	
Depreciation—miscellaneous.....	32, 985. 27	
Depletion.....	16, 635. 22	
Income tax.....	202, 106. 17	
Bad accounts.....	8, 424. 74	
Total.....		1, 816, 416. 45
Current liabilities:		
Account payable purchases.....	\$34, 912. 32	
Accounts payable sundries.....	808. 91	
Pay rolls and salaries.....	21, 693. 70	
Coal adjustment.....	3, 381. 27	
Total.....		60, 796. 20
Foreign bags.....		13, 545. 30
Brass checks.....		74. 75
Bag redemption.....		230, 820. 16
Unclaimed wages.....		299. 65
Total.....		3, 371, 952. 51
Surplus.....	\$1, 628, 764. 74	
Profit and Loss, 1926.....	272, 794. 26	
		1, 901, 559. 00
		5, 273, 511. 51

EXHIBIT "B"

Cayuga Operating Co., Inc., balance sheet, May 31, 1926

ASSETS

Capital assets:		
Plant—Cement Co.....	\$1, 909, 789. 26	
Plant—Power Co.....	314, 036. 04	
Construction.....	10, 681. 25	
Total.....		\$2, 234, 506. 55
Stores and material:		
Coal.....	\$13, 520. 52	
Gypsum.....	1, 568. 79	
Supplies.....	126, 272. 85	
Explosive stock.....	4, 469. 39	
Total.....		145, 831. 55
Current assets:		
Bulk cement stock.....	\$172, 712. 93	
White cement stock.....	901. 58	
Clinker stock.....	82, 152. 93	
Accounts receivable cement.....	78, 923. 00	
Sundry accounts.....	2, 962. 10	
Sundry claims.....	102. 70	
Cash.....	15, 835. 60	
Cash advances.....	1, 995. 25	
Cash freight account.....	10, 000. 00	
Total.....		365, 586. 09
Investment account.....	\$42, 844. 51	
Unexpired insurance, Guaranty Trust Co. (Cement Co.).....	2, 663. 34	
Guaranty Trust Co. (Power Co.).....	1, 156. 17	
Accrued taxes.....	2, 806. 29	
		49, 470. 31
		2, 795, 394. 50

Cayuga Operating Co., Inc., balance sheet, May 31, 1926—Cont.

LIABILITIES

Capital liabilities:

Cayuga Operating Co., Inc., capital stock issued	\$50,000. 00	
First mortgage bonds	119,000. 00	
Total (Operating Co.)		\$169,000. 00
Cayuga Power Co., first mortgage. bonds		76,000. 00

Reserves:

Depreciation (Operating Co.)	\$432,295. 45	
Depletion	7,902. 59	
Federal income taxes	8,039. 34	
Sinking fund (Operating Co.)		
Total (Operating Co.)		448,237. 38
Depreciation (Power Co.)	\$111,113. 34	
Sinking fund (Power Co.)	18,000. 00	
Total (Power Co.)		129,113. 34

Current liabilities:

Accounts payable—purchases	\$12,305. 56	
Accts. payable—miscellaneous	729. 96	
Notes payable (Pa. C. Co.)	797,343. 20	
Payrolls and salaries	15,711. 25	
Penna Cement Co.	119,545. 11	
Total		945,635. 08
First mortgage bond and note interest	\$22,875. 67	
Brass checks	133. 25	
Unclaimed wages	133. 28	
Unexpired insurance	5,480. 79	
Suspense	120,907. 09	
		149,530. 08

Total		1,917,515. 88
Surplus	\$828,940. 56	
Profit and loss	48,938. 06	
		877,878. 62
		2,795,394. 50

EXHIBIT "C"

(Form of Certificate of Deposit)

No. Shares

CERTIFICATE OF DEPOSIT OF SHARES OF CAPITAL STOCK OF PENNSYLVANIA CEMENT COMPANY

THIS CERTIFIES that has deposited with the undersigned, The National City Bank of New York, certificates purporting to be for shares of the capital stock of the PENNSYLVANIA CEMENT COMPANY, subject to the terms and conditions of, and deliverable as provided in, an Agreement, dated July .., 1926, between certain stockholders of the Pennsylvania Cement Company, parties of the first part, The National City Company and Hemphill, Noyes & Company, parties of the second part, and the undersigned as Depositary, party of the third part. The holder hereof by accepting this Certificate, assents to and is bound by all the provisions of the said Agreement, and is entitled to receive all the securities or cash, or both, to which the depositor of the said shares is or may become entitled pursuant to the provisions of the said Agreement. This Certificate and the rights represented hereby may be transferred upon books kept by the undersigned for that purpose by the holder hereof in person or by duly authorized attorney upon surrender of this Certificate to the undersigned, properly indorsed.

Dated, New York,

THE NATIONAL CITY BANK OF NEW YORK,
as Depositary.
By ———, Authorized Officer.

(Form of Indorsement)

FOR VALUE RECEIVED, the undersigned hereby sells, assigns and transfers unto ----- the within Certificate and all rights represented thereby, and irrevocably constitutes and appoints -----, attorney, to transfer the same on the books of The National City Bank of New York, with full power of substitution in the premises.

Dated -----

----- [L. S.]

In the presence of -----

NOTICE: The signature to this assignment must correspond with the name as written upon the face of the Certificate in every particular, without alteration or enlargement, or any change whatever.

EXHIBIT No. 3.

AGREEMENT, made this 23rd day of July 1926, by and between RICHARD HARDY and THOMAS R. PRESTON, individually and as a Committee of the holders of the Common Capital Stock of Dixie Portland Cement Company (hereinafter called "Committee"), parties of the first part, and THE NATIONAL CITY COMPANY, a corporation organized under the laws of the State of New York, and HEMPHILL, NOYES & COMPANY, a copartnership doing business in the City and State of New York (hereinafter called "Syndicate"), parties of the second part, WITNESSETH:

That in consideration of the premises and of the mutual agreements and undertakings herein contained and of the payment by the Syndicate to the Committee of the sum of Ten Dollars (\$10) in cash, receipt of which is hereby acknowledged, the parties hereto hereby agree as follows:

I. The Committee represents—

(a) That Dixie Portland Cement Company (hereinafter called "Dixie Company") owns and operates a plant for the manufacture of Portland Cement in or near the City of Chattanooga, Tennessee, and also owns, free of any lien or charge, all the issued and outstanding shares of stock of Dixie Sand & Gravel Company, a corporation of the State of Tennessee.

(b) That attached hereto and marked Exhibit "A", and Exhibit "B", respectively, are true copies of the balance sheets of Dixie Company and of said Dixie Sand & Gravel Company, and that said balance sheets correctly set forth the respective financial conditions of said companies as of the close of business on April 30th, 1926.

II. The Syndicate represents that it will use its best efforts to cause to be organized a corporation (hereinafter called "Consolidated Company") for the purpose of acquiring, directly or indirectly, the assets of Dixie Portland Cement Company and of its said subsidiary and the assets of certain other cement companies, including all or some of the following companies: Dexter Portland Cement Company, a Pennsylvania corporation, and its subsidiaries, Clinchfield Portland Cement Corporation, a Virginia corporation, and its subsidiaries, and Pennsylvania Cement Company, a Pennsylvania corporation, and its subsidiary. The Consolidated Company may be organized as a new corporation with such name and under the laws of such state as the Syndicate may deem desirable, or it may be created through the consolidation of one or more of the above-mentioned companies, or through the amendment of the charter of any one of them to provide for the capital structure below outlined.

The capital of the Consolidated Company shall consist of an authorized issue of \$20,000,000 par value of Preferred Stock bearing cumulative dividends at the rate of 7% per annum and redeemable at not exceeding \$115 per share, of which (except as below provided) not more than \$13,000,000 par value shall be outstanding at the completion of the consolidation; and an authorized issue of 1,000,000 shares of Common Stock having no par value, of which not more than 400,000 shares shall be outstanding at the completion of the consolidation. The Consolidated Company will also authorize an issue of not exceeding \$20,000,000 of bonds bearing interest at not exceeding 6% per annum, and maturing not more than twenty years from their date, of which not more than \$13,000,000 will be outstanding at the completion of the consolidation. Should the face amount of bonds outstanding at the completion of the consolidation be reduced below \$13,000,000, the amount of Preferred Stock then outstanding may be increased by an amount equivalent to such reduction.

III. The Committee agrees to use its best efforts to cause all holders of the Common Stock of Dixie Company to deposit their shares with the Hamilton National Bank, of Chattanooga, Tennessee, under a deposit agreement with the Committee, and with proxies or powers of attorney running to the Committee, in form sufficient to authorize the Committee to vote for a transfer of the assets of Dixie Company to the Consolidated Company, and to take any other action, corporate or otherwise, which may be necessary or desirable to carry out the terms of this Agreement.

IV. The Committee agrees subject to its being able to obtain the deposit of not less than 75% in amount of the shares of the Common Stock of Dixie Company in the manner aforesaid, forthwith upon request of the Syndicate to cause Dixie Company to sell, assign, transfer, and deliver to the Consolidated Company, all the assets and properties of every character and description of Dixie Company, including all issued and outstanding shares of stock of its subsidiary company and trade-marks, trade-names and goodwill, and to accept in full payment therefor securities of the Consolidated Company of the character above described as follows: \$2,679,000 in bonds, at their face value, 26,790 shares of Preferred Stock, 59,533 $\frac{1}{2}$ shares of Common Stock; *Provided*, that the amount of bonds, as above provided, which Dixie Company shall be entitled to receive in part payment for its assets, shall be reduced by an amount equal to \$100 per share for each share of its Preferred Stock acquired by Dixie Company prior to April 30, 1926, and held in its treasury on that date, and shall be further reduced by an amount equivalent to the cash which shall have been paid by Dixie Company since that date to holders of its Preferred Stock in purchase or redemption of their shares (but not including cash paid for accrued dividends thereon) or deposited by the said Company with a bank or trust company for the purpose of effecting such purchase or redemption:

If the assets of Dixie Company are not transferred to the consolidated company and the consideration paid in accordance with the terms hereof on or before October 1, 1926, then and in that event all the net earnings of the Dixie Company accruing subsequent to October 1, 1926, shall not be included in the assets to be transferred to the consolidated company but shall remain as assets of the Dixie Company for distribution among its stockholders.

V. The Syndicate agrees, subject to the conditions hereinafter set forth, to cause said Consolidated Company to purchase and acquire all of the assets of Dixie Company, and to make payment therefor to Dixie Company, in the securities of the Consolidated Company as hereinabove set forth, and to cause said Consolidated Company to enter into a contract with Dixie Company for the assumption by the Consolidated Company of all liabilities of Dixie Company and of its subsidiary shown on the annexed balance sheets, as well as any obligation incurred for moneys borrowed as permitted by paragraph (4) of this Article V; provided:

(1) That the Consolidated Company in a manner and to an extent satisfactory to the Syndicate shall be able to acquire the assets and properties of other companies mentioned in the foregoing Article II of this Agreement.

(2) That the earnings and financial condition of all of said companies, including Dixie Company, when checked by independent auditors approved by the Syndicate, will be in substantial accord with the representations with respect thereto which have been made to the Syndicate; and that a report by Messrs. Ford, Bacon & Davis, Engineers, appointed by The Syndicate for the purpose of making a survey of the properties of said companies, will in all respects be satisfactory to the Syndicate.

(3) That no substantial defects will appear in the titles to any of the properties of any of said companies;

(4) That from April 30, 1926, the date of the balance sheets hereto annexed, to the date of the transfer of the assets of Dixie Company to the Consolidated Company, no dividend or distribution of assets has been declared or paid to the Stockholders of Dixie Company, except a dividend of 3 $\frac{1}{2}$ percent. on its Preferred Stock, payable July 1, 1926, and that no substantial expenditure of funds or dissipation of assets has taken place, except as may have been required in the regular and usual course of business; except that the Company may redeem all of its Preferred Stock outstanding on April 30, 1926, and borrow all or any part of the amount required for this purpose.

(5) That the legality and validity of the merger or acquisition of said companies and of all matters relating to their combination or merger shall be approved by counsel satisfactory to the Syndicate;

(6) That there shall be no substantial decline in the general market for industrial securities of the character to be issued by the Consolidated Company.

VI. In the event of the consolidation becoming effective, the Committee agrees forthwith to take all necessary action to effect the speedy dissolution of Dixie Company and the prompt distribution to its stockholders of the securities of the Consolidated Company received by it; provided, that the securities of the Consolidated Company to which stockholders represented by the Committee are entitled shall be deposited with The National City Bank of New York subject to the order of the Committee.

The Committee hereby agrees to sell to the Syndicate—

(a) All bonds of the Consolidated Company so deposited; and

(b) All shares of the Common and Preferred Stocks of the Consolidated Company so deposited, less such number of shares of said Common and/or Preferred Stocks as the Committee shall notify the Syndicate of its election to retain as hereinbelow provided.

Notice of its election to retain any portion of the said Common or Preferred Stocks of the Consolidated Company shall be given by the Committee to the Syndicate not later than twenty (20) days from the date of this Agreement, shall be in writing signed by the Committee and shall specify the number of said shares of Common and/or Preferred Stocks sold to the Syndicate, and the number of shares of said stocks which the Committee has elected to retain.

The Syndicate hereby agrees to purchase from the Committee the securities described in (a) and (b) above and to make payment therefor by depositing with The National City Bank of New York to the order of the Committee for the account of stockholders of Dixie Company represented by it, the following amounts in cash, viz.:

For each bond of the Consolidated Company so purchased an amount equal to the face value thereof without interest;

For each share of Preferred Stock of the Consolidated Company so purchased an amount equal to the par value thereof;

For each share of the Common Stock of the Consolidated Company so purchased, Forty-five Dollars (\$45).

The Syndicate also agrees to deposit with said The National City Bank of New York to the order of the Committee Four and 50/100 Dollars (\$4.50) for each share of Preferred Stock which the Committee has elected to retain, and one-fifth ($\frac{1}{5}$) of a share of Common Stock for each share of Common Stock which the Committee has elected to retain.

VII. In consideration of the said deposit by the Syndicate, the Committee agrees to deposit all certificates representing such Common and Preferred Stocks of the Consolidated Company retained by the Committee with the Hamilton National Bank, of Chattanooga, Tennessee, and that it will not sell or dispose of any of said stocks or permit any of said stocks to be sold or disposed of for a period of six (6) months from the day of their delivery to said Bank without the consent in writing of the Syndicate first had and obtained, and will not for a further period of six (6) months sell or dispose of any of said stocks or permit any of said stocks to be sold or disposed of without being first offered to the Syndicate at the prices at which it may be desired to offer the same for sale. Said stocks shall be held by said Hamilton National Bank under such deposit agreement or deposit agreements or receipts as may be necessary, appropriate or desirable to carry out the provisions of this Article VII.

VIII. All expenses in connection with the transfer of assets and dissolution of Dixie Company including fees and expenses of Hamilton National Bank, as depositary, shall be borne by the Consolidated Company, and all proceedings relating thereto shall be supervised by counsel for the Syndicate whose charges and disbursements shall likewise be paid by the Consolidated Company.

IX. All notices or requests provided to be given to the Committee shall be sufficiently given if sent by mail, postage prepaid, to Richard Hardy, at Chattanooga, Tennessee, and any notice so mailed shall be conclusively deemed to be received by the Committee. All notices required to be given or filed with the Syndicate shall be sufficiently given or filed if delivered to The National City Company at its office No. 55 Wall Street, New York City.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

RICHARD HARDY. [L. S.]

THOMAS R. PRESTON. [L. S.]

Not individually but as a Committee of the holders of the Common Stock of Dixie Portland Cement Company.

THE NATIONAL CITY COMPANY

By STANLEY A. RUSSELL, *Vice President.*

Attest:

F. J. MAGUIRE, *Asst. Secretary.*

HEMPHILL NOYES Co. [L. S.]

EXHIBIT "A"

Dixie Portland Cement Co.

Statement as at April 30, 1926

ASSETS

Liquid assets:		
Cash.....	\$572, 034. 49	
Receivables:		
Open accounts.....	\$289, 919. 95	
Notes.....	51, 874. 89	
	<hr/>	341, 793. 94
Stocks and bonds.....	96, 900. 00	
Cement and raw materials.....	114, 998. 10	
	<hr/>	\$1, 125, 726. 53
Working assets:		
Mill supplies, fuel and gypsum.....	148, 686. 89	
Bags, patterns and tools.....	54, 956. 02	
Furniture, fixtures and laboratory equipment.....	27, 347. 49	
Teaming and auto equipment.....	27, 898. 72	
Dixie inn and hospital supplies and equipment.....	7, 842. 79	
	<hr/>	266, 731. 91
Dixie Sand & Gravel Co.....		387, 044. 51
Dixie Concrete Products Co.....		110, 075. 07
Fixed assets: Real estate, buildings and equipment (less depreciation).....		2, 447, 965. 13
	<hr/>	<hr/>
Total.....		4, 337, 543. 15

LIABILITIES

Current payables:		
Open accounts.....	\$110, 271. 07	
Customers' sack account.....	61, 167. 68	
Unidentified bags.....	11, 025. 71	
	<hr/>	\$182, 464. 46
Reserves:		
Taxes.....	59, 308. 11	
Miscellaneous.....	304, 150. 89	
	<hr/>	363, 459. 00
Surplus: Undivided net income.....		272, 419. 69
Capital stock:		
Preferred.....		1, 024, 200. 00
Common.....		2, 495, 000. 00
	<hr/>	<hr/>
Total.....		4, 337, 543. 15

EXHIBIT "B"

*Dixie Sand & Gravel Co.**Statement as at April 30, 1926*

ASSETS		
Liquid:		
Cash.....		\$1, 529. 95
Accounts receivable.....	\$14, 401. 33	
Bills receivable.....	511. 50	
		14, 912. 83
Sand and gravel.....		14, 880. 84
		\$31, 323. 62
Working:		
Operation supplies.....	6, 450. 48	
Patterns.....	140. 10	
Tools.....	921. 93	
Automobile.....	1, 225. 00	
Office equipment.....	948. 97	
		9, 686. 48
Fixed: Real estate, plant and equipment.....		625, 449. 37
Deferred charges:		
Extraordinary repairs.....	\$150. 00	
Accident to employees.....	74. 40	
Insurance.....	1, 747. 35	
		1, 971. 75
Total.....		668, 431. 22
LIABILITIES		
Current:		
Accounts payable.....	\$8, 793. 93	
Dixie Portland Cement Co.....	368, 120. 81	
		376, 914. 74
Reserve:		
Adjusting previous years' accounts.....	3. 99	
Junk.....	200. 00	
Depreciation.....	177, 987. 71	
Reserve for taxes.....	1, 778. 27	
Bad accounts.....	1, 036. 55	
Coaling.....	39. 38	
		181, 045. 90
Surplus and undivided profits.....		91, 970. 58
Capital less treasury stock.....		18, 500. 00
Total.....		668, 431. 22

EXHIBIT No. 4

AGREEMENT, made this 29th day of July 1926, by and between JOHN A. MILLER, individually and as representing the holders of the Common Capital Stock of Dexter Portland Cement Company (hereinafter called "Miller"), party of the first part, and THE NATIONAL CITY COMPANY, a corporation organized under the laws of the State of New York, and HEMPHILL, NOYES & COMPANY, a copartnership doing business in the City and State of New York (hereinafter called "Syndicate"), parties of the second part, and THE NATIONAL CITY BANK OF NEW YORK, a national banking corporation (hereinafter called "Depository"), party of the third part, WITNESSETH:

That in consideration of the premises and of the mutual agreements and undertakings herein contained and of the payment by the Syndicate to Miller of the sum of Ten Dollars (\$10) in cash, receipt of which is hereby acknowledged, the parties hereto hereby agree as follows:

I. Miller represents—

(a) That Dexter Portland Cement Company (hereinafter called "Dexter Company") owns and operates two plants known as the "Dexter" and "Penn Allen" plants, for the manufacture of Portland Cement in or near the City of Nazareth, Pennsylvania.

(b) That attached hereto and marked Exhibit "A," is a true copy of the balance sheet of Dexter Company, and that said balance sheet correctly sets forth the financial condition of said company as of the close of business on May 31st, 1926.

II. The Syndicate agrees to use its best efforts to cause to be organized a corporation (hereinafter called "Consolidated Company") for the purpose of acquiring, directly or indirectly, the business, property, and assets of Dexter Company and the business, property, and assets of certain other cement companies, including all or some of the following companies: Dixie Portland Cement Company, a West Virginia corporation, and its subsidiaries; Clinchfield Portland Cement Corporation, a Virginia corporation, and its subsidiaries; and Pennsylvania Cement Company, a Pennsylvania corporation, and its subsidiaries. The Consolidated Company may be organized as a new corporation with such name and under the laws of such state as the Syndicate may deem desirable, or it may be created through the consolidation of one or more of the above-mentioned companies, or through the amendment of the charter of any one of them to provide for the capital structure below outlined.

The capital of the Consolidated Company shall consist of an authorized issue of \$20,000,000 par value of Preferred Stock bearing cumulative dividends at the rate of 7% per annum and redeemable at not exceeding \$115 per share, of which (except as below provided) not more than \$13,000,000 par value shall be outstanding at the completion of the consolidation; and an authorized issue of 1,000,000 shares of Common Stock having no par value, of which not more than 400,000 shares shall be outstanding at the completion of the consolidation. The Consolidated Company will also authorize an issue of not exceeding \$20,000,000 of Bonds bearing interest at not exceeding 6% per annum, and maturing not more than twenty years from their date, of which not more than \$13,000,000 will be outstanding at the completion of the consolidation. Should the face amount of Bonds outstanding at the completion of the consolidation be reduced below \$13,000,000, the amount of Preferred Stock then outstanding may be increased by an amount equivalent to such reduction.

III. Miller agrees to use his best efforts to cause all holders of the Common Stock of Dexter Company to deposit their shares with the Depositary, under this Agreement, with proxies or powers of attorney running to Miller, in form sufficient in the opinion of the Syndicate to authorize Miller to vote for a transfer of the assets of Dexter Company to the Consolidated Company, and to take any other action, corporate or otherwise, which may be necessary or desirable to carry out the terms of this Agreement.

The shares of the Dexter Company so deposited shall be held by the Depositary subject to the terms and provisions of this Agreement. Unless, prior to October 1, 1926, there shall have been deposited with the Depositary the securities and/or cash specified in Article IV of this Agreement as the purchase price to be paid by the Consolidated Company for the assets and properties of Dexter Company, the Depositary shall promptly return the shares of stock of Dexter Company deposited with it hereunder to the persons or companies depositing the same, respectively. In the event that said securities and/or cash specified in Article IV of this Agreement are deposited with the Depositary prior to October 1, 1926, the Depositary shall deliver the shares of stock of the Dexter Company deposited with it to or upon the order of Miller.

IV. Miller agrees subject to his being able to obtain the deposit of not less than 75% of the shares of the Common Stock of Dexter Company in the manner aforesaid, forthwith upon request of the Syndicate to cause Dexter Company to sell, assign, transfer, and deliver to the Consolidated Company, all its business, assets, and properties of every character and description, including all trade-marks, trade names, and goodwill and to receive in full payment therefor securities of the Consolidated Company of the character above described as follows: \$1,722,240 in Bonds, at their face value, 17,222.4 shares of Preferred Stock, 38,272 shares of Common Stock; *Provided*, that if the net current assets of Dexter Company as of July 31, 1926, as determined by the auditors selected by the Syndicate, shall be less than \$1,100,000, then, and in that event, the face value of the Bonds which Dexter Company shall be entitled to receive in part payment of its assets shall be reduced by the amount, if any, that said net current assets of Dexter Company determined as above provided shall be less than \$1,100,000; *Provided, further*, that if said net current assets of Dexter Company determined as above set forth shall be in excess of \$1,300,000, an amount equivalent to such excess shall be paid to Dexter Company in cash in addition to the securities above mentioned.

V. The Syndicate agrees, subject to the conditions hereinafter set forth, to cause said Consolidated Company to purchase and acquire all of the assets of Dexter Company, and to make payment therefor to Dexter Company in the

securities of the Consolidated Company as hereinabove set forth, and to cause said Consolidated Company to enter into a contract with Dexter Company for the assumption by the Consolidated Company of all liabilities of Dexter Company shown on the annexed balance sheet: *Provided*.

(1) That the Consolidated Company will be able, in the opinion of the Syndicate, to acquire the assets and properties of other companies mentioned in the foregoing Article II of this Agreement, in a manner and on a basis satisfactory to the Syndicate.

(2) That the earnings and financial condition of all of said companies, including Dexter Company, when checked by independent auditors approved by the Syndicate, will be in substantial accord with the representations with respect thereto which have been made to the Syndicate; and that a report by Messrs. Ford, Bacon & Davis, Engineers, appointed by the Syndicate for the purpose of making a survey of the properties of said companies, will in all respects be satisfactory to the Syndicate.

(3) That no substantial defects will appear in the titles to any of the properties of any of said companies.

(4) That from May 31, 1926, the date of the balance sheets hereto annexed, to the date of the transfer of the assets of Dexter Company to the Consolidated Company, no dividend or distribution of assets shall have been declared or paid to the stockholders of Dexter Company, except the regular dividends on its Preferred and Common Stock, payable prior to August 1, 1926, at the current rate, and that after July 31, 1926, no dividend or distribution of assets shall have been declared or paid to such stockholders, unless the aggregate amount of such dividend or distribution shall have been set forth on the balance sheet of the Dexter Company as of July 31, 1926; and that no substantial expenditure of funds or dissipation of assets has taken place, except as may have been required in the regular and usual course of business, and except that the company may pay certain bonuses at the rates now authorized to be paid to its officers and employees, but not exceeding \$100,000 in aggregate amount.

(5) That the legality and validity of the merger or acquisition of said companies and of all matters relating to their combination or merger shall be approved by counsel selected by the Syndicate.

(6) That there shall be no substantial decline in the general market for industrial securities of the character to be issued by the Consolidated Company.

VI. In the event of the consolidation becoming effective, Miller agrees forthwith to take all necessary action to effect the distribution to the stockholders of Dexter Company of the securities of the Consolidated Company received for the assets of Dexter Company: *Provided*, that the securities of the Consolidated Company to which stockholders represented by Miller are entitled shall be forthwith deposited with the Depositary, subject to the order of Miller, pursuant to the terms and provisions hereof.

Miller hereby agrees to sell to the Syndicate

(a) All Bonds of the Consolidated Company so deposited; and

(b) All shares of the Common and Preferred Stocks of the Consolidated Company so deposited, less such number of shares of said Common and/or Preferred Stocks as Miller shall notify the Syndicate of his election to retain as hereinbelow provided.

Notice of his election to retain any portion of the said Common or Preferred Stocks of the Consolidated Company shall be given by Miller to the Syndicate not later than twenty (20) days from the date of this Agreement, shall be in writing signed by Miller and shall specify the number of said shares of Common and/or Preferred Stocks sold to the Syndicate, and the number of shares of said stocks which Miller has elected to retain.

The Syndicate hereby agrees to purchase from Miller the securities described in (a) and (b) above and to make payment therefor by depositing with the Depositary to the order of Miller for the account of stockholders of Dexter Company represented by him, the following amounts in cash, viz:

For each bond of the Consolidated Company so purchased an amount equal to the face value thereof without interest;

For each share of Preferred Stock of the Consolidated Company so purchased an amount equal to the par value thereof;

For each share of the Common Stock of the Consolidated Company so purchased, Forty-five Dollars (\$45).

The Syndicate also agrees to deposit with the said Depositary to the order of Miller $\frac{1}{4}$ of one share of Preferred Stock for each share of Preferred Stock which Miller has elected to retain, and $\frac{1}{4}$ of one share of Common Stock for each share of Common Stock which Miller has elected to retain.

VII. In consideration of said deposit by the Syndicate, Miller agrees that he will deposit all certificates representing Common and Preferred Stocks of the Consolidated Company retained by him or deposited for his account with the Depositary, and that he will not sell or dispose of any of said Stocks or permit any of said Stocks to be sold or disposed of for a period of six (6) months from the day of their delivery to the Depositary without the consent in writing of the Syndicate first had and obtained, and will not for a further period of six (6) months sell or dispose of any of said Stocks or permit any of said Stocks to be sold or disposed of without being first offered to the Syndicate at the prices at which it may be desired to offer the same for sale. Said Stocks shall be held by the Depositary under such deposit agreement or deposit agreements or receipts as may be necessary, appropriate, or desirable to carry out the provisions of this Article VII.

VIII. The fees and expenses of the Depositary, and all expenses in connection with the transfer of assets of Dexter Company shall be borne by the Consolidated Company, and all proceedings relating thereto shall be supervised by counsel for the Syndicate whose charges and disbursements shall likewise be paid by the Consolidated Company.

IX. All notices or requests provided to be given to Miller shall be sufficiently given if sent by registered mail, postage prepaid, to JOHN A. MILLER, at 350 Madison Avenue, New York, N. Y., and any notice so mailed shall be conclusively deemed to be received by Miller. All notices required to be given or filed with the Syndicate shall be sufficiently given or filed if delivered to The National City Company at its office, No. 55 Wall Street, New York City.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

[L. S.]
Individually, and as representing the holders of the Common
Capital Stock of Dexter Portland Cement Company.

THE NATIONAL CITY COMPANY,
By _____, Vice President.

Attest:
_____, Secretary.
[L. S.]

THE NATIONAL CITY BANK OF NEW YORK,
By _____, Assistant Trust Officer.

Attest:
_____, Assistant Cashier.

EXHIBIT "A"

Dexter Portland Cement Co. balance sheet, May 31, 1926

ASSETS

Current assets:

Cash in banks and on hand.....	\$256,594.01	
Notes receivable, less reserve of \$10,361.42..	42,441.03	
Customers' accounts receivable, less reserve of \$34,675.42.....	384,332.07	
Advances to officers and employees.....	8,380.79	
Other accounts receivable.....	7,229.62	
Inventories, at cost or market whichever is lower, as certi- fied by responsible officials:		
Cement.....	\$255,957.76	
Raw material, supplies, and work in process....	544,416.31	
	800,374.07	
		\$1,499,351.59
Deferred charges to future operations: Prepaid insurance and taxes.....		11,486.31
Investments: Miscellaneous stocks.....	\$9,150.00	
Less reserve.....	4,300.00	
		4,850.00

Dexter Portland Cement Co. balance sheet, May 31, 1926—Continued

ASSETS—continued

Property account: Land, buildings, machinery, and equipment.....	\$4, 738, 777. 31	
Less reserve for depreciation and depletion.....	1, 607, 581. 14	
		\$3, 131, 196. 17
Goodwill, being cost of capital stock of Penn-Allen Cement Co. in excess of the book value thereof.....		797, 379. 11
Total.....		<u>5, 444, 263. 18</u>

LIABILITIES

Current liabilities:		
Notes payable, banks.....	\$240, 000. 00	
Accounts payable.....	76, 666. 85	
Accrued wages, salaries, bonuses, taxes, and other expenses.....	209, 819. 36	
Provision for Federal income taxes.....	149, 202. 20	
		675, 688. 41
First-mortgage, 6-percent serial gold bonds: Due \$165,000 on Dec. 15 each year to 1934 and \$715,000 on Dec. 15, 1935.....		2, 200, 000. 00
Capital stock:		
Authorized—125,000 shares of \$40 each.....	\$5, 000, 000. 00	
Issued:		
Preferred, 40 shares of \$40 each.....	1, 600. 00	
Common, 49,640 shares of \$40 each.....	1, 985, 600. 00	
		1, 987, 200. 00
Surplus.....		581, 374. 77
Total.....		<u>5, 444, 263. 18</u>

EXHIBIT No. 5

[Copy]

SEPTEMBER 18TH, 1926.

TO PENNSYLVANIA-DIXIE CEMENT CORPORATION:

I. We offer to cause to be conveyed, transferred, and delivered to your Company, the following properties and cash:

(a) All the plants, real estate, assets, properties, and business of Pennsylvania Cement Company, a Pennsylvania corporation, and of its subsidiary, Cayuga Operating Co., Inc., a New York corporation, including cash in bank, accounts receivable, trade-marks, trade names, and goodwill.

(b) All the plants, real estate, assets, properties, and business of Dexter Portland Cement Company, a Pennsylvania corporation, including cash in bank, accounts receivable, trade-marks, trade names, and goodwill.

(c) All the plants, real estate, assets, properties, and business of Dixie Portland Cement Company, a West Virginia corporation, including cash in bank (other than cash necessary to retire Preferred Stock), accounts receivable, trade-marks, trade names, and goodwill, and the capital stock (or at your election, the assets) of its subsidiary, Dixie Sand & Gravel Company, a corporation of the State of Tennessee.

(d) All the plants, real estate, assets, properties, and business of Clinchfield Portland Cement Corporation, a Virginia corporation, including cash in bank, accounts receivable, trade-marks, trade names and goodwill, and the capital stock (or at your election the assets) of its subsidiary, Marcem Quarries Corporation, a corporation of the State of Virginia.

It is the intention to transfer to your Company as going concerns all the properties, assets, and businesses of the companies named in Items (a), (b), (c), and (d) as the same shall be at the date, or at the respective dates of transfer, and subject to all the debts, liabilities, and obligations of said companies, respectively, all of which your Company must assume and pay,

(e) \$1,336,728.65 in cash, such cash to be in addition to all cash included among the assets of the companies named in Items (a), (b), (c), and (d).

It is understood that your Company will assume and pay all expenses incident to the transaction, including all expenses of transferring the above properties, the charges and expenses of all depositaries of stocks of the above-mentioned companies, or of your Company, the charges and expenses of all engineers, appraisers, and accountants retained to examine or to report on the condition of the above properties, and the fees and disbursements of our attorneys, and all expenses paid or incurred by us incident to the consolidation.

II. We submit for your information a statement by Messrs. Price, Waterhouse & Company of the combined financial condition of the above-mentioned companies as of July 31, 1926, based on the commercial value of the fixed assets as appraised by Ford, Bacon & Davis, Inc., Engineers, which statement shows a combined net worth of over \$35,000,000, excluding the cash mentioned in Item (e). We, however, make no representations as to the net worth, or the commercial or other value of the said properties, assets, and businesses, and we assume no responsibility for the correctness of the valuations placed thereon by said engineers.

It must be understood that our undertaking to cause to be conveyed, transferred, and delivered to your Company the assets mentioned in Items (a), (b), (c), and (d) above, will be fully complied with if we cause the respective companies to execute and deliver, directly to your Company, such deeds, conveyances, bills of sale, assignments or other instruments of transfer as in the opinion of your counsel shall be sufficient to vest in your Company such title to the items of property thereby sold, assigned, and conveyed, or intended so to be, as the company or companies respectively executing the same shall have at the time of the execution and delivery of the same; and we make no representations or warranties as to the sufficiency of the said deeds, conveyances, bills of sale, assignments, or other instruments of transfer or as to the validity of the rights, titles, and interests thereby given, granted, or conveyed.

It is further understood that any changes which may take place in the balance sheets or current earnings of the said respective companies, or in their assets and liabilities, or in the conditions affecting their respective businesses, before the transfer of their assets and businesses to your Company is completed, shall be at your risk.

III. In consideration of the transfer to your Company of the foregoing assets and going businesses, your Company shall issue the following securities: \$13,000,000, aggregate principal amount, of its First Mortgage Sinking Fund Gold Bonds, Series A, bearing interest at the rate of 6% and due September 15th, 1941; 130,000 shares of its Series A, Convertible 7% Cumulative Preferred Stock of the par value of \$100 a share; and 288,000 shares of its Common Stock without nominal or par value.

Such securities shall be issued in the manner following:

(1) \$3,703,703.70, aggregate principal amount, of the said Bonds; 34,904.01 shares of the said Preferred Stock; and 88,888.89 shares of the said Common Stock, to be deposited for the account of the Stockholders of the Pennsylvania Cement Company with The National City Bank of New York, as Depositary, under the Agreement hereinafter referred to, dated July 26, 1926, a copy of which is hereto annexed, marked "Schedule A";

(2) \$1,722,240, aggregate principal amount, of the said bonds; 17,222.4 shares of the said Preferred Stock; and 38,272 shares of the said Common Stock to be deposited subject to the order of John A. Miller with The National City Bank of New York, as Depositary, under the Agreement hereinafter referred to, dated July 29, 1926, a copy of which is hereto annexed, marked "Schedule B";

(3) \$1,654,800, aggregate principal amount, of the said Bonds; 26,790 shares of the said Preferred Stock; and 59,533½ shares of said Common Stock, to be deposited subject to the order of Richard Hardy and Thomas R. Preston with The National City Bank of New York, as Depositary, under the agreement hereinafter referred to, dated July 23, 1926, a copy of which is hereto annexed, marked "Schedule C";

(4) \$1,563,048.23, aggregate principal amount, of the said Bonds; 25,875 shares of the said Preferred Stock; and 51,111.11 shares of the said Common Stock, to be deposited subject to the order of The Securities Company and John B. Dennis, as a Committee, with The National City Bank of New York, as Depositary, under the Agreement hereinafter referred to, dated July 24, 1926, a copy of which is hereto annexed, marked "Schedule D"; and

(5) \$4,356,208.07, aggregate principal amount, of the said Bonds; 25,208.59 shares of the said Preferred Stock; and 50,194.67 shares of the said Common Stock, to the undersigned jointly.

It is understood that, upon the request of the undersigned, your Company will make application to list on The New York Stock Exchange all issued amounts of the above-mentioned stocks and bonds.

IV. In order that you may be informed as to the profit resulting to us from this transaction, we refer to the following Agreements annexed hereto as Schedules "A," "B," "C," and "D," respectively:

Schedule A: Agreement, dated July 26, 1926, between certain Stockholders of Pennsylvania Cement Company, The National City Company, and Hemphill, Noyes & Company, and The National City Bank of New York, as Depositary;

Schedule B: Agreement, dated July 29, 1926, between John A. Miller, individually and as representing holders of the Common Stock of Dexter Portland Cement Company, The National City Company and Hemphill, Noyes & Company, and The National City Bank of New York, as Depositary;

Schedule C: Agreement, dated July 23, 1926, between Richard Hardy and Thomas R. Preston, individually and as a Committee of the holders of the Common Stock of Dixie Portland Cement Company, The National City Company and Hemphill, Noyes & Company, and The National City Bank of New York, as Depositary;

Schedule D: Agreement, dated July 24, 1926, between The Securities Company and John B. Dennis, individually and as a Committee of the holders of the Common Stock of Clinchfield Portland Cement Corporation, The National City Company and Hemphill, Noyes & Company, and The National City Bank of New York, as Depositary.

V. If the foregoing offer is accepted by you, we will, at your option, to be exercised by notice to us in writing, within two days after the acceptance of this offer, subscribe to, and within ten days after the transfer to your Company of the properties above referred to, pay for 112,000 additional shares of your Company's Common Stock without par value at \$35 a share, such stock to be issued and delivered to us, or upon our order, upon payment to your Company of the full subscription price of \$3,920,000, and such stock to include the ten shares subscribed for by the incorporators and by them assigned to James G. Scarff, and by him to the undersigned as appears from the annexed assignment, marked "Schedule E."

VI. The foregoing offer is subject to the condition that it must be accepted within five days from the date thereof.

Very truly yours,

THE NATIONAL CITY COMPANY,
By STANLEY A. RUSSELL,
Vice-President, Hemphill, Noyes & Co.

EXHIBIT No. 6

[Copy]

SEPTEMBER 18, 1926.

THE NATIONAL CITY COMPANY AND HEMPHILL, NOYES & COMPANY.

DEAR SIRs: This will advise you that your offer to this Company, dated September 18, 1926, for the transfer to this Company of the properties of Pennsylvania Cement Company, Dexter Portland Cement Company, Dixie Portland Cement Company, and Clinchfield Portland Cement Corporation has been accepted by this Company.

Please be advised also that this Company elects to accept your proposal contained in said offer to subscribe to 112,000 shares of the Common Stock upon the terms and conditions therein set forth.

Very truly yours,

PENNSYLVANIA-DIXIE CEMENT CORPORATION,
By _____, *President.*

Receipt of a copy of the foregoing letter is hereby acknowledged.
New York, September 20, 1926.

THE NATIONAL CITY COMPANY,
By _____, *Vice President.*

APPENDIX C

HISTORICAL DEVELOPMENT AND MERGER MOTIVES OF BETHLEHEM STEEL CORPORATION

This case study is offered in compliance with that part of section 2 of the joint resolution creating a Temporary National Economic Committee (S. J. Res. 300, Public Resolution No. 113, 75th Cong.) in which reference is made to certain aspects of the monopoly problem which were referred to in the President's message of April 29, 1938.

It will be recalled that in section VI of the President's message it was observed, "We have learned that the so-called competitive system works differently in an industry where there are many independent units from the way it works in an industry where a few large producers dominate the market," and that "there should be a thorough study of the effect of that concentration upon the decline of competition."

Other phases of the problem are raised by the additional observation that "industrial efficiency does not have to mean empire building"; nevertheless, the "heavy hand of integrated financial and management control lies upon large and strategic areas of American industry."

Elsewhere in the President's message it is suggested that the price practices in specific basic industries have exhibited certain seemingly uneconomic and unsocial characteristics and that some connection may exist between such practices and the acknowledged fact of integrated financial and management control or concentration of economic power.

These and other assertions of like import should be accepted as a challenge to inquire whether a partial answer, at least, may not be found within the industries mentioned by the President and in the existing files of the Federal Trade Commission, and without the further expenditure of public funds.

Since the practices of one of the industries mentioned by the President are now involved in formal proceedings before the Commission (Docket 3167) and since some of the facts involving the other and coming within the issues presented in formal proceedings before the Commission have not been correlated heretofore,¹ the choice seems logically to fall upon the larger and perhaps more basic steel industry.

CONCENTRATION IN THE STEEL INDUSTRY

While this is primarily a study of the merger motives and historical development of Bethlehem Steel Corporation, it necessarily involves some study of the first and larger concentration accomplished by United States Steel Corporation, to which some reference must be made in order that there may be a more complete understanding of the facts which follow.

¹ Formal action *In the Matter of Bethlehem Steel Corporation*, Docket 962, was suspended by reason of the decision of the U. S. Supreme Court in the *Eastman Kodak case*, 274 U. S. 619. (See pp. 218-19 of this report.)

Moreover it has been urged in lesser merger cases before the courts and in other proceedings before the Department of Justice and the Federal Trade Commission that size is not an offense against the law, that in the steel dissolution suit the court refused to condemn a combination of approximately 45 percent of the total ingot capacity, and "of course the decision (just referred to) is controlling."² In defense of the right to pursue the particular merchandising plan of the steel industry in which the United States Steel Corporation was (and still is) the acknowledged leader, it was contended that "the existence of the Steel Corporation, the scope of its operations, the power which it exerts, its actual or potential influence, has received legal sanction. The necessary consequence of its being and the natural results of its operation must be accepted also."³

In view of the apparent misinterpretation of what the Supreme Court said in the dissolution suit, it may not be out of place to recite the quotation which the Court made from the opinion of Judges Wooley and Hunt in the court below as seeming to reflect its own view in the matter:

The view was expressed that neither the Steel Corporation nor the preceding combinations, which were in a sense its antetypes, had the justification of industrial conditions, nor were they or it impelled by the necessity for integration, or compelled to unite in comprehensive enterprise because such had become a condition of success under the new order of things. On the contrary, that the organizers of the corporation and the preceding companies had illegal purpose from the very beginning, and the corporation became "a combination of combinations, by which, directly or indirectly, approximately 180 independent concerns were brought under one business control," which, measured by the amount of production, extended to 80 percent or 90 percent of the entire output of the country, and that its purpose was to secure great profits which were thought possible in the light of the history of its constituent combinations, and to accomplish permanently what those combinations had demonstrated could be accomplished temporarily, and thereby monopolize and restrain trade.⁴

On the question of size and productive capacity the majority opinion of the Court definitely stated that the Steel Corporation was "equal or nearly equal to them all, but its power over prices was not and is not commensurate with its power to produce."⁵ The magnitude of that consolidation is difficult of appreciation without reference to the summary which accompanied the Corporation's first annual report of manufacturing plants and other properties acquired (exhibit 2).

The Court considered at great length the effect of the Corporation upon competitors and the testimony of customers, and rejected the Government's contention that there had been any oppression of either class. In the majority view the Government was "reduced to the assertion that the size of the corporation, the power it may have, not the assertion of the power, is an abhorrence to the law * * *"—that is to say, that the combination embodied in the Corporation "unduly restrains competition by its necessary effects and therefore is unlawful regardless of purpose." The opinion continues to the effect that the oppressive size of the corporation requires an effort of resolution not to exaggerate its influence, and continues, "but we must adhere to the law and the law does not make mere size an offense or the existence of unasserted power an offense."⁶

² Opinion of the Attorney General to the President of the Senate issued in response to S. R. 286, May 12, 1922 (exhibit 1).

³ Dissenting opinion of Commissioner Gaskill in F. T. C. Docket 760.

⁴ 251 U. S. 407.

⁵ Ibid., at 445.

⁶ Ibid., at 451.

Nowhere is it suggested in that opinion that mere size was a factor in the decision and that in other circumstances would it be impossible to find that a combination of substantially less than 45 percent of the country's total ingot capacity might not inhibit the law. Moreover, at some pains it pointed out that confederated action was not asserted; "if it were this suit would take on another cast. The competitors would cease to be the victims of the corporation and would become its accomplices."⁷

The offenses against the public were assumed to have ceased with the discontinuance of the Gary dinners something more than 3 years before the commencement of the suit. Yet there was in effect and in full flower at that time a practice in the steel industry, around which the Gary dinner activities revolved,⁸ which another Attorney General represented to the court in a later case as "one of the most effective of all devices to fix prices and plunder the consuming public" * * * "If the Government was aware of the existence of this contrivance it was not mentioned by counsel at any time and the Corporation never permitted the court to see it.

It is, in our present understanding of this problem, indeed an incredible thing that such an important influence as the basing point system should have been entirely ignored in the greatest law suit the world has ever seen.¹⁰

The possible connection between this practice, later known as "Pittsburgh plus," and subsequent events in the steel industry will appear later in this report.

Among the principal competitors of the United States Steel Corporation for its different forms in 1922 were the following, in the order of their rated ingot capacities in gross tons:

	<i>Ingot capacity (gross tons)</i> ¹¹
Midvale Steel & Ordnance Co.: Cambria Steel Co.....	2, 710, 000
Lackawanna Steel Co.....	1, 840, 000
Youngstown Sheet & Tube Co.....	1, 520, 000
Bethlehem Steel Co.....	1, 412, 000
Republic Iron & Steel Co.....	1, 400, 000
Inland Steel Co.....	1, 000, 000
Steel & Tube Co. of America.....	690, 000
Brier Hill Steel Co.....	648, 000

In 1938 the respective ingot capacities of the nine largest producers were:

	<i>Ingot capacity (gross tons)</i> ¹²
United States Steel Corporation.....	25, 790, 000
Bethlehem Steel Corporation.....	10, 042, 000
Republic Steel Corporation.....	6, 500, 000
Jones & Laughlin Steel Corporation.....	3, 660, 000
Youngstown Sheet & Tube Co.....	3, 120, 000
National Steel Corporation.....	3, 400, 000
American Rolling Mill Co.....	2, 669, 520
Inland Steel Co.....	2, 340, 000
Wheeling Steel Corporation.....	1, 750, 000

⁷ Ibid, at 449.

⁸ The price for steel referred to by Judge Gary in the dissolution suit as the "advertised price, so to speak, what are considered trade paper prices," were then as now merely one factor of the "destination price" which, is the sole manner in which all rolled steel forms (except rails) were then and are now sold. For testimony by Judge Gary see exhibit 3.

⁹ Brief for the Government in the District Court of the United States for the Southern District of New York. In Equity No. 59-103, Sugar Institute, Inc., et al, Defendants, p. 246.

¹⁰ Frank A. Fetter, *Masquerade of Monopoly*, Harcourt Brace & Co., New York, 1931, p. 144.

¹¹ U. S. Steel Corporation exhibit No. 444 in Docket No. 760, *F. T. C. v. United States Steel Corporation*

¹² Hearings before the T. N. E. C. pt. 27, exhibit No. 2236. See exhibit 4 attached.

What became of Midvale-Cambria and Lackawanna Steel Co., the second and third largest producers both of which were situated in the highly industrialized section of the United States east of Pittsburgh, and what were the causes of their disappearance?

MERGERS IN THE STEEL INDUSTRY, 1922-23

During the early months of 1922 and immediately prior thereto certain events were occurring in the steel industry which will be correlated later. The situation at that time is briefly summarized in Senate Resolution 286, Sixty-seventh Congress, second session, May 12, 1922 (exhibit 5), which recited definite reports that there was about to be consummated a merger of seven of the largest steel companies having a total annual capacity of more than 10 million tons of steel, the consummation of which it was said would result in the creation of a billion dollar corporation controlling substantially all of the steel-producing capacity of the country which was not then controlled by the United States Steel Corporation.

The resolution directed the Attorney General and the Federal Trade Commission to inform the Senate as soon as possible what steps they had taken or proposed to take to ascertain the purposes and probable effects of the proposed merger, and what actions they had instituted to protect the public interest.

The North American Steel Co. as originally conceived contemplated as stated in the Senate resolution the inclusion of Lackawanna Steel Co. and, among others, the Brier Hill Steel Co. and Steel & Tube Co. of America.

A short time prior to June 1, 1922, Lackawanna dropped out of the proposed North American steel merger and was promptly absorbed by or merged with Bethlehem Steel Co. The Federal Trade Commission thereupon on June 3, 1922, issued its complaint against these companies in Docket No. 891, and on June 5 advised the Senate of its action. In the same communication the Commission advised the Senate that the formation of the proposed North American Steel Co. had not so far progressed as to enable it to reach a reason to believe that the merger would or would not carry the same tendency as in the case of the Bethlehem-Lackawanna merger, but that further investigation was in progress and a later report would be rendered. A copy of this communication is supplied for the convenient reference of the committee as exhibit 6.

On July 21, 1922, however, the Attorney General in responding to the Senate, in a very elaborate opinion advised it that as to the Bethlehem-Lackawanna merger he was persuaded that the motive which prompted Bethlehem to acquire Lackawanna was the sole desire to secure greater efficiency and economy in the production, handling and distribution of steel products, and that the thought of acquiring a monopoly or enhancing prices was never present; that the whole transaction from beginning to end impressed him as being thoroughly clean, honest, and straightforward (exhibit 1). He then pointed out that in *United States v. U. S. Steel Corporation* the Supreme Court refused to declare illegal a combination of much greater magnitude, and while the avowed purpose of that combination was to acquire a monopoly, that such monopoly as inhibited the law was found to be impossible of attainment. He added that the proposed

merger would not result in an actual monopoly nor was it even an attempt to monopolize and that of course the decision in the dissolution suit would be controlling upon him. The net result of that merger was to give to the Bethlehem Steel Corporation a practical monopoly of the ingot capacity and of the production of certain forms of rolled steel products in the territory east of the Buffalo-Pittsburgh line, a territory somewhat larger than the German Reich before Munich. A graphic illustration of the geographical advantages of location of the plants acquired by Bethlehem Steel Corporation from 1916 to 1923 over the potentially competitive Pittsburgh and Birming-ham districts appears herein as exhibit 7.

In the meantime Youngstown Sheet & Tube Co. had deserted the proposed North American Steel Co. (exhibit 8) and active negotiations were carried on between Midvale, Republic, and Inland only; although it was said by the promoters that neither Brier Hill Steel Co. nor the Steel & Tube Co. of America were then wholly out of the picture.

In this case the Attorney General again advised the Senate that he saw nothing in the proposed merger that would offend against the Sherman Act (exhibit 1). He stressed the rather minor percentage which each company produced of the country's total capacity, and reached the conclusion that because of such minor proportion there would be no possibility of substantially lessening competition in any part of the country. Some of the reasons which led him to this conclusion, which are given in considerable detail, are extremely interesting when examined in the light of the Commission's later development of the facts.

On August 31, 1922, the Commission issued complaint in the *Midvale-Republic-Inland case*, Docket No. 905, and on September 28 the executives of Midvale-Republic-Inland issued a public statement saying that at a meeting held that day "the entire situation arising from the action of the Federal Trade Commission was reviewed and the conclusion was reached that under existing circumstances it was not possible to proceed with the proposed merger * * *." The Commission thereupon dismissed the complaint (October 21, 1922). A copy of that statement was supplied the Commission by the promoters (Chadbourne, Babbitt & Wallace) on October 4 and appears herein as exhibit 9.

Almost immediately rumors began to appear of Bethlehem's intention to acquire Midvale, and on or about November 24, 1922, it was announced that Bethlehem had entered into an agreement to consolidate with Midvale Steel & Ordnance Co. and Cambria Steel Co., which was to be accomplished by the acquisition by Bethlehem of the physical properties of the other companies. The Commission accordingly dismissed the complaint in Docket No. 891 (which involved only Bethlehem and Lackawanna) and issued its complaint in Docket No. 962 (January 26, 1923) directed against the merger involving also Midvale and Cambria.

During the prosecution of complaint in Docket No. 962 the Commission was also prosecuting a complaint against the Eastman Kodak Co. and others (Docket No. 977, issued April 19, 1923), in which it charged the illegal acquisition of competitors. In an action to review the judgment of the United States circuit court of appeals, the Supreme Court on May 31, 1927, handed down an opinion which

declared the Commission was without authority to order the divestiture of physical assets (274 U. S. 619). The Commission thereupon discontinued taking testimony, and later closed the proceeding.

It may be of interest to note that two other companies originally mentioned in connection with the formation of the North American Steel Co., i. e., the Brier Hill Steel Co. and the Steel & Tube Co. of America, later (1923) passed into the hands of a third, the Youngstown Sheet & Tube Co.

Perhaps equally as interesting and significant was the attempt in 1928 of Youngstown to acquire Inland (exhibit 10) and the attempt in 1930 of Bethlehem to acquire Youngstown, the latter move being defeated by a minority group of Youngstown stockholders (exhibit 11).

PROPORTIONS OF BETHLEHEM STEEL CORPORATION, THEN AND NOW

The latest available Iron and Steel Works Directory of the United States and Canada published by the American Iron and Steel Institute shows the aggregate ingot capacity of Bethlehem plants as of September 15, 1938, as 9,662,000 gross tons. There is submitted herewith as exhibit 12 a genealogy of Bethlehem Steel Corporation as shown in Poor's Industrials, 1934, which includes mention of the acquisition by Bethlehem of certain properties in the Pacific Coast States which were acquired in 1930. This study is not concerned with these later acquisitions, although it may be noted in passing that the remaining properties on the Pacific coast were acquired by the United States Steel Corporation. It is concerned principally with the facts and motives which impelled the acquisitions in 1922 and 1923. Some of these motives are very near the surface and something may be said concerning them with certainty.

In the case of the Lackawanna properties acquired in 1922 it is well known that among other things Bethlehem acquired a very favorable location. In the eighteenth annual report to the stockholders of Bethlehem Steel Corporation for the year 1922 it is said with respect to Lackawanna that—

There has been thus added to the Bethlehem properties important raw material properties and a large steel plant at Lackawanna near Buffalo having a steel ingot capacity of 1,840,000 gross tons, well located for assembling raw materials, manufacturing and distributing its products to the important markets in the Middle West and Canada. The steel ingot capacity of your corporation is now 4,890,000 gross tons per annum (exhibit 13).

In the same report it is also said that agreements were entered into on November 24, 1922, for the purchase of Midvale Steel & Ordnance Co. (except the Nicetown, Pa., plant) and all the properties and assets of Cambria Steel Co.; that the consummation of this purchase would increase the steel capacity of Bethlehem to 7,600,000 gross tons per annum which would equal about 15 percent of the steel capacity of the country, and would add many important lines to those then produced by Bethlehem. It added that with these acquisitions Bethlehem would become a producer of all the important commercial steels except pipe and seamless tube. Moreover that these acquisitions would add very valuable ore and coal properties and that their operation in conjunction with properties then owned by Bethlehem would permit of more economical assembling of raw materials. The report pointed out another incentive, the importance of which will appear later, that "the unifying of the operations of the

manufacturing properties will permit of a more advantageous allocation of orders." Finally it promised that, through these important advantages as well as by a reduction of overhead expense and the elimination of duplications in the distributing costs, the position of Bethlehem in competition with other commercial producers would be materially improved.

The nineteenth annual report of Bethlehem Steel Corporation for the year 1923 includes an account of the acquisitions of the Midvale-Cambria properties and their transfer to Bethlehem as of March 30, and also discloses what was then considered by those well informed in trade as one incentive to these acquisitions no less important than the control of the Cambria Iron Co. properties. That incentive is glimpsed in the aggregate sales of Bethlehem for that year (including both Lackawanna and Midvale-Cambria) as \$260,968,326 "including \$5,261,000 of orders on the books of Midvale Steel & Ordnance Co. and Cambria Steel Co. on the date of the acquisitions of their properties" (exhibit 14). This backlog of orders accumulated during an unusually lean period doubtless reflected the aggressive sales policy of Midvale and to some extent, as will be shown, the reduction from the so-called Redfield scale of prices, which was initiated by Midvale in a determination to attract tonnage to its mills. That effort, however, is another part of the story.

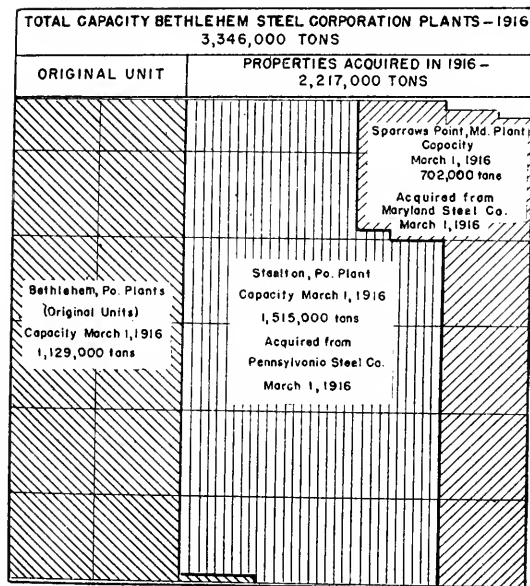
Although what has been said may comprehend the larger and more important acquisitions by Bethlehem of its competitors it does not by any means embrace all of them.

The history of Bethlehem Steel is a continuous tale of acquisitions of competitors and of competitive locations; of a horizontal and not a vertical integration such as might be expected when the objective is mass production and a consequent optimum of efficiency. Although the evidentiary matter is not quite complete, there is sufficient to show that some of the incentives to these acquisitions were exactly those known to underlie the formation of the United States Steel Corporation and that their consummation was the realization of the dreams of some of the same men.

With the aid of some recollection of what has occurred in the steel industry since 1912 and the evidentiary facts contained in the records of the Federal Trade Commission, it is not difficult to reconstruct in greater detail a general picture of Bethlehem's development which is recorded in Poor's Industrials and elsewhere.

The historical development of Bethlehem Steel Corporation as portrayed in chart I is based on steel-making capacity expressed in gross tons of ingots. It shows the original units of Bethlehem plants located at Bethlehem, Pa., on March 1, 1916, as 1,129,000 tons; that it acquired in that year the plants of the Pennsylvania Steel Co. at Steelton, Pa., having a capacity of 1,515,000 tons, and another plant with a capacity of 702,000 tons from the Maryland Steel Co. at Sparrows Point, Md. Exhibits 15 and 16 hereto, which are but fragmentary parts of the evidence available, are conclusive on the question as to whether these plants made common products and sold to common customers. These sales contracts show not only that Pennsylvania Steel Co., Maryland Steel Co., and Bethlehem Steel Co. were selling large tonnages of rails to both the Pennsylvania Railroad and Baltimore & Ohio Railroad, but also that the Cambria Steel Co. and Lackawanna Steel Co. were likewise selling to the same roads. Exhibit 16 is a somewhat broader showing of the same general facts.

HISTORICAL DEVELOPMENT OF STEEL INGOT CAPACITY OF BETHLEHEM STEEL CORPORATION 1916—1923 (GROSS TONS)



Ingot Capacity of original unit of Bethlehem Plant of
Bethlehem Steel Co. as of December 31, 1922 . . . 1,412,000 Tons
Ingot Capacity of original unit of Bethlehem Plant of
Bethlehem Steel Co., March 1916 . . . 1,129,000
Increase in capacity of original unit at Bethlehem, Pa.
for period 1916 to 1923 . . . 283,000

Plants Acquired in Competitive Locations During Period 1916-1923

March 1, 1916 Pennsylvania Steel Co.	Steelton, Pa.	1,515,000 Tons
March 1, 1916 Maryland Steel Co.	Sparrows Point, Md.	702,000
Oct. 10, 1922 Lackawanna Steel Co.	Lackawanna, N.Y.	1,840,000
March 2, 1923 Midvale Steel & Ordnance Co.	(Coatesville, Pa.) (Wilmington, Del.) (Johnstown, Pa.)	550,000 144,000 2,016,000
Total		6,767,000

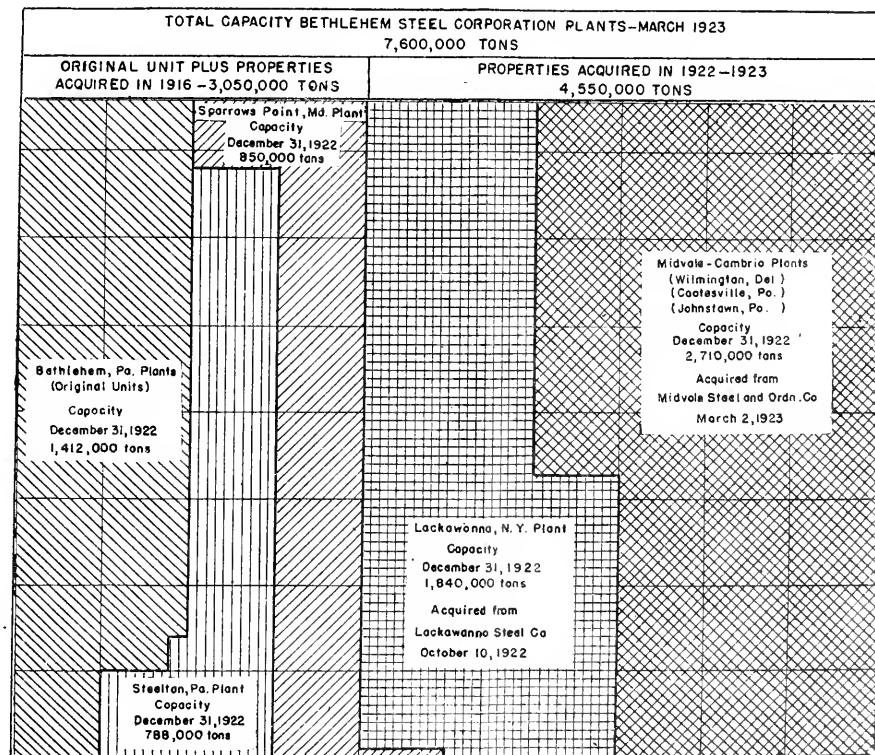


Chart I also contrasts the combined ingot capacity of the Bethlehem, Steelton, and Sparrows Point units as of December 31, 1922, with the combined capacities of Lackawanna and Midvale-Cambria, both of which were acquired in something less than 5 months in 1922-23, a period in which Bethlehem's acquisition of competitors in strongly competitive locations increased its ingot capacity almost 150 percent. As stated earlier the chart is in terms of steel-making capacity as expressed in steel ingots which is the crudest form in which steel is produced as distinguished from commercial steel in the form of capital and consumer goods and therefore represents potential rather than actual competition in the strictest sense. It will later be shown that when the Pittsburgh-plus system broke down temporarily during the depression of 1921-22, actual and very active competition developed involving several forms and very large tonnages of finished-steel products, especially between the Midvale and Lackawanna companies on one side and Bethlehem and United States Steel on the other, the latter group striving to maintain the merchandising plan which had been standardized and developed under the leadership of the Steel Corporation during the Gary dinners.

At the moment it is desired to make plain only what happened in the steel industry in that part of the United States in which Bethlehem was especially interested (the territory east of Pittsburgh) as expressed in ingot-capacity figures. They show that during the period 1916 to 1922, inclusive, the capacity of the original unit of Bethlehem at Bethlehem, Pa., was increased but 283,000 tons. During this same period Bethlehem had acquired from Pennsylvania Steel Co. at Steelton and from Maryland Steel Co. at Sparrows Point additional ingot capacity aggregating 2,217,000 tons. Chart I details the acquisitions of Bethlehem during the period 1916-23, the aggregate of which was 6,767,000 tons. In other words during the period in which Bethlehem was expanding the capacity of the original unit at Bethlehem by 283,000 tons it had acquired 6,767,000 tons in competitive locations. In other words for every ton of ingots which Bethlehem expanded the capacities of the original Bethlehem plants they acquired almost 25 tons in competitive locations. It shows that of a total of 7,600,000 tons possessed by Bethlehem in March 1923 it had acquired 4,550,000 tons from two competitors within a period of 5 months. The situation is shown in greater detail in chart II which outlines the manner in which the aggregate ingot capacities of the Bethlehem plant as of December 31, 1922, became 3,050,000 tons.

CHART II.—*Historical development of Bethlehem Steel Corporation in gross tons of ingot capacity, 1916-38*

Showing—

(a) Ingot capacity (in gross tons) of original unit of Bethlehem Steel Co. at Bethlehem, Pa., March 1, 1916.

(b) The locations and capacities of the competitive plants acquired in that year.

(c) Capacities as of December 31, 1922,¹ of original unit of Bethlehem Steel Co., and the plants acquired in 1916.(d) Location and ingot capacities as of December 31, 1922,¹ of competitive plants acquired in 1922 and 1923.

(e) Capacities of the several plants of Bethlehem Steel Co. as of September 15, 1938.

(f) Change in ingot capacities of the various plants during periods 1916-22, 1923-38, and 1916-38.

	Capacities as shown in Iron and Steel Works Directory of United States and Canada, Mar. 1, 1916		Capacities as of Dec. 31, 1922 ¹ of respective plants of Bethlehem Steel Corporation and the competitive plants acquired in 1922-23	Capacities as shown in Iron and Steel Works Directory of United States and Canada, Sept. 15, 1938
	<i>Tons</i>		<i>Tons</i>	<i>Tons</i>
Bethlehem Steel Co.: Lehigh and Saucon plants, South Bethlehem, Pa.	1,129,000	Bethlehem Steel Co.: Bethlehem plant....	1,412,000	1,840,000
Pennsylvania Steel Co.: Steelton, Pa., plant (acquired by Bethlehem Mar. 1, 1916).	1,515,000	Steelton plant.....	788,000	660,000
Maryland Steel Co.: Sparrows Point, Md., plant (acquired by Bethlehem Mar. 1, 1916).	702,000	Sparrows Point, Md., plant.	830,000	2,965,000
		Lackawanna Steel Co.: Lackawanna, N. Y., plant (acquired by Bethlehem Oct. 10, 1922).	1,840,000	2,592,000
		Midvale Steel & Ordnance Co.: Coatesville, Pa., plant, ³ 550,000 tons; Wilmington, Del., plant, ⁴ 144,000 tons.		(?)
		Cambria Steel Co.: Johnstown, Pa., plant, ⁵ 2,016,000 tons (Midvale acquired by Bethlehem Mar. 2, 1923).	2,710,000	1,605,000
Total.....	3,346,000		7,600,000	9,662,000

CHANGE IN INGOT CAPACITIES

	1916-Dec. 31, 1922		1923-38		1916-38	
	Increase	Decrease	Increase	Decrease	Increase	Decrease
Bethlehem plant.....	283,000		428,000		711,000	
Steelton plant.....		727,000		128,000		855,000
Sparrows Point, Md., plant.....	148,000		2,115,000		2,263,000	
Lackawanna plant.....	\$ 240,000		752,000		992,000	
Coatesville, Pa., plant.....	7 125,000			550,000		550,000
Wilmington, Del., plant.....	144,000			144,000		144,000
Johnstown, Pa., plant.....	\$ 236,000			411,000		175,000

¹ Shown in respondent's exhibit 444 in docket No. 760, *F. T. C. v. U. S. Steel Corp.*, submitted by William G. Gray, assistant secretary, American Iron & Steel Institute. No Iron and Steel Works Directory published in 1922.² Produces finished products only.³ Midvale acquired Coatesville plant from Worth Bros., Inc., Oct. 13, 1915.⁴ Midvale acquired Wilmington plant from Wilmington Steel Co. Nov. 1, 1917.⁵ Midvale acquired controlling interest in Cambria Steel Co. Feb. 10, 1916.⁶ 1916 capacity, 1,600,000 tons, Iron and Steel Works Directory of United States and Canada, Mar. 1, 1916.⁷ 1916 capacity, 425,000 tons, Iron and Steel Works Directory of United States and Canada, Mar. 1, 1916.⁸ 1916 capacity, 1,780,000 tons, Iron and Steel Works Directory of United States and Canada, Mar. 1, 1916.

Chart II also details the ingot capacities of the respective plants of Bethlehem as shown by the most recent Iron and Steel Works Directory of the United States and Canada, published September 15, 1938, at which time the aggregate is shown as 9,662,000 tons. Attention is particularly suggested to changes in the capacities of these plants which occurred in the periods 1916-22 and 1923-38, respectively, especially to the fact that the total increase in the Bethlehem plant was but 711,000 tons during which time the Sparrows Point plant was being increased 2,263,000 tons and the Lackawanna plant 992,000, and to note the respective positions of these plants on the map (exhibit 7). During the same period the authorities cited in chart II show that the ingot capacity of the Steelton plant, which was acquired from Pennsylvania Steel Co., was reduced by 727,000, that during the period 1923-38 Steelton was reduced an additional 128,000 tons, and that the plants acquired from other competitors were reduced as follows:

	<i>Tons</i>
Coatesville.....	557, 000
Wilmington.....	144, 000
Johnstown.....	411, 000

It is a matter of some interest to note that the expansion of the Lackawanna Plant at Buffalo during the 16 years' ownership by Bethlehem was 752,000 tons compared to the increase at Bethlehem during the same period of 428,000 tons, and that Scranton, Pa., is but about 70 miles north of Bethlehem as the crow flies, from which location Lackawanna had moved to Buffalo 20 years previously.

BETHLEHEM VERSUS LACKAWANNA

It has been suggested that this study will present evidence that actual price competition developed in 1921-22 between Lackawanna-Midvale-Cambria and Bethlehem on certain forms of rolled steel. That showing would involve, in the first instance at least, some evidence that those companies produced identical forms of steel. It would involve also some showing that they had solicited sales and had sold those forms in the same general territory, and what would be more convincing, to the same customers.

In the reply of Attorney General Daugherty to Senate Resolution No. 286 some rough quantitative measurements were undertaken of the capacities for the production and distribution of several forms of rolled-steel products. In order that there may be no question as to what was said therein or the source of the data upon which the statements purport to have been based and in view of the importance of the conclusions reached, the reply of the Attorney General is reproduced in full as exhibit 1. Many of the statements made are recognized as extravagances and others as without any apparent foundation in fact. Doubtless much of the so-called information upon which the Attorney General relied was furnished by the producers as he reported that "in order to furnish information which I called for it was necessary for these companies to set at work for many days a large clerical force to go through hundreds of thousands of invoices covering each individual sale for the years 1919, 1920, and 1921 * * * and the figures for all these years are before me * * *." Immediately thereafter is set forth a long list of raw materials, fabricated articles, and rolled-steel products said to have been produced by Bethlehem

but which were not produced by Lackawanna. It is then said: "On the other hand the Lackawanna produces for sale a number of articles which Bethlehem does not. These include base plates, piling, plate piling, merchant steel bars, including rounds, squares, and flats, agricultural shapes, and auto sections." Later the Attorney General states, "I have set forth with considerable detail the extent of the competition between the two companies."

As an illustration of some of these inaccuracies from which erroneous conclusions were reached, reference is made to the statement concerning Bethlehem's capacity for the production of bars. Contrary facts were then currently being shown in considerable detail in evidence before the Federal Trade Commission in Docket No. 760, and later in respondents' exhibit 444 prepared by the assistant secretary of the American Iron and Steel Institute, i. e., that the capacities of the various mills here concerned for the production of "merchant bars, bands, hooks, and shapes under 3 inches," all commonly known to be bar mill products, were as of December 31, 1922, as follows:

Bethlehem Steel Corporation:	Tons
Bethlehem, Pa.	270, 000
Steelton, Pa.	125, 000
Lebanon, Pa.	112, 000
Reading, Pa.	37, 000
	<hr/>
	544, 000
Lackawanna Steel Co., Lackawanna (Buffalo), N. Y.	381, 000
Cambria Steel Co., Johnstown, Pa.	440, 640

Moreover the stock lists and rolling schedules issued by Bethlehem Steel Corporation from time to time during that period, which are in evidence in F. T. C. Docket 962, show practically a full range of bar sizes. An abstract of the stock list of bar sizes of "commercial quality steel, under .25 carbon" carried "in stock at Pittsburgh, Steelton, Cleveland, Lebanon, and Pittsburgh warehouses, of bars in mill lengths December 1, 1921," which is dated something less than 7 months prior to the Attorney General's advice to the Senate, is submitted as exhibit 17. This list shows 57 different sizes of rounds, 61 different sizes of flats, 2 different styles and 13 different sizes of concrete reinforcing bars, all of which the Attorney General advised the Senate were not made by Bethlehem.

There is also submitted as exhibit 18 hereto a list of invoices covering substantial shipments of certain specific sizes of flat bars shipped by Bethlehem and Lackawanna prior to its acquisition by Bethlehem, and from the Lackawanna plant subsequent to that acquisition. There is included as exhibit 19 an abstract from contracts, invoices, and acknowledgments of orders contained in the record in docket 962 covering bolt and rivet rods and other forms, known as rounds, to customers of Bethlehem in Pennsylvania, New York, and Connecticut. The abstract also shows substantial shipments of the same character by Lackawanna Steel Co. and Cambria Steel Co. immediately prior to their acquisition by Bethlehem. In five instances sales were made by two producers to the same consumer. Other facts concerning prices charged, to which reference is made in the note appearing on the exhibit, will be referred to later.

The fact that Bethlehem produced and sold to a customer at Endicott, N. Y., very large tonnages of small bar mill sizes of forging

billets in the years immediately preceding the acquisition of Lackawanna-Midvale-Cambria is shown by partial abstract of invoices which appears in the record in F. T. C. Docket 962 (exhibit 20). Abundant evidence exists in the same record that Lackawanna and Cambria were producers of the same form of material.

Structural Shapes.

"In point of tonnage and revenue this constitutes a very important item" in the opinion of Attorney General Daugherty (exhibit 1), but as the combined production of both Lackawanna and Bethlehem "in the domestic trade was 14.49 percent of the total production in the United States" and the distribution of that total varied considerably in various subdivisions of the United States, the conclusion is reached that the Clayton Act "denounces the acquisition only where the effect may be substantially to lessen competition between the companies"; that the effect of this merger was not "substantially to lessen competition between them or to restrain commerce in any section or community * * *" (exhibit 1). Mention was not made, however, of the productive capacities of either company. It is noted that the Iron and Steel Works Directory of the United States and Canada for the year 1920, to which the Attorney General occasionally referred, shows the capacity of Bethlehem's Saucon plant at Bethlehem as 710,000 tons and Lackawanna Steel Co. as 225,000 tons. The same authority also gives the capacity of the Cambria plant as 980,000 tons of structural shapes, plates, and bars, there being no subdivision of the three items. The capacity of the latter is given since it will be referred to presently. It is noted, however, that the structural capacity of the Cambria plant is given in respondents' exhibit 444 in F. T. C. Docket 760 as 184,800 tons.

As evidence that Bethlehem and Lackawanna both made and shipped substantial quantities of the same size of angles (a form of structural shapes) there is submitted as exhibit 21 an abstract of invoices contained in F. T. C. Docket 962 covering sales by both companies to a customer at Bridgeport, Conn.; by Lackawanna during the period prior to the acquisition of Lackawanna by Bethlehem, and by Bethlehem both prior and subsequent to such acquisition. It will be noted also that these shipments include three bar mill sizes. The fact that the same sizes of heavy structural shapes were being produced by both Bethlehem and Lackawanna and sold in substantial quantities to common customers at Rochester, N. Y., in the 2 years immediately prior to the acquisition by Bethlehem of Lackawanna is shown by exhibit 22 hereto. These shipments include angles varying from 2 to 6 inches and structural beams varying all the way from 8 to 15 inches. This tabulation merely purports to illustrate the general facts stated. It does not purport to show anything approaching a quantitative measure of the total shipments by either producer. The potential competition between the two companies is illustrated by the fact that orders placed with Bethlehem Steel Co. prior to October 21, 1922, and partially filled by shipments from Bethlehem, Pa., were, subsequent to the acquisition by Bethlehem of Lackawanna, filled in part by shipments from Lackawanna, N. Y. It shows instances in which shipments applying upon specific orders placed with the Bethlehem Steel Co., which included standard structural shapes and special sections, the latter made only by Bethlehem,

were partially filled by shipments of standard shapes from Lackawanna, N. Y., immediately subsequent to the acquisition of Lackawanna by Bethlehem.

Additional evidence of the same general character is shown with respect to a specific contract covering standard structural shapes placed with Bethlehem on August 28, 1922, by a Syracuse, N. Y., customer.

Exhibit 23 is copy of an acknowledgment of executory contract by Bethlehem Steel Co. with a customer at Syracuse, N. Y., dated August 19, 1922, covering 1,850 tons of "plain standard sections, sheared and universal mill plates" for use in connection with the Utica-Lowville tower lines for the Northern New York Utilities Co., the first shipments against which were made by Bethlehem in September, prior to the acquisition of Lackawanna at a destination price of 2.04 cents per pound for structural shapes, of which 33 carloads were shipped from Bethlehem, Pa. in the succeeding 3 months. Immediately succeeding the acquisition of Lackawanna by Bethlehem substantial tonnages applying on the contract were allocated to Lackawanna, which included 7 sizes of heavy channels varying in weight from 9.8 pounds to 20.7 pounds per lineal foot, which were likewise produced and shipped from Bethlehem, Pa.

Exhibit 24 is a partial abstract of invoices covering the same contract showing the same general facts and in addition thereto the order numbers to which they relate and the delivered price received therefor. It will be observed that in addition to the substantial shipments of structural shapes which were allocated to the Lackawanna almost immediately upon its acquisition by Bethlehem, 13 carloads of bars, which the Attorney General reported that Bethlehem did not produce, are shown as having been made by that company and as having been produced at Bethlehem, Pa.

Among the many evidences of the production and shipment by Bethlehem and Lackawanna of common forms of structural shapes to common customers in different sections of the country were the invoices rendered by each to Russell Wheel & Foundry Co., a structural fabricator at Detroit, Mich., which covered periods both prior and subsequent to the acquisition by Bethlehem of Lackawanna-Midvale-Cambria (exhibit 25). This exhibit lists approximately 450 carloads of heavy structural shapes which were shipped by Bethlehem and Lackawanna during the years 1922-25 and a portion of 1926 and include shipments by both companies prior to the acquisition by Bethlehem of Lackawanna. The shipments are indicated in greater detail in order that there may be no misconception as to the substantial nature of the tonnage and of the potential competition which existed between these companies. Incidentally, they also show 6 carloads of structural shapes by Cambria Steel Co. prior to its acquisition by Bethlehem and approximately 200 cars starting immediately thereafter and continuing for nearly 3 years succeeding it, to which reference will be made later.

As further evidence of the same general facts which have just been recited, there is submitted as exhibit 26 a partial abstract of invoices rendered by Bethlehem Steel Co. against Whitehead & Kales Co., Detroit, Mich., during the first 6 months of the year 1926 showing that Bethlehem continued to ship standard structural shapes from both Lackawanna, N. Y., and Bethlehem, Pa., upon which the

uniform valuation of 2.14 cents per pound applied. It also shows that substantial shipments of plates were made during that year from both the Lackawanna, N. Y., and the Johnstown, Pa., works, which had been acquired from Lackawanna Steel and Midvale-Cambria, respectively.

Reference has been made heretofore to the Attorney General's large list of raw materials, fabricated articles, and rolled-steel products produced by Bethlehem which were not produced or sold by Lackawanna (exhibit 1). His analysis of the lack of substantial competition between Bethlehem and Lackawanna and the assumed facts on which he based his conclusion that the merger was not one in which the effect "may be substantially to lessen competition between them or to restrain commerce in any section or community" involve a novel method of determining the presence or absence of factors which may tend to lessen competition in any section or community. He said:

Taking the figures for 1920 as a basis it appears that of the income received by the Bethlehem from its steel products division, 67.60 percent was derived from products which the Lackawanna does not produce. In the case of the Lackawanna 31.98 percent was derived from products which the Bethlehem does not produce.

As the Attorney General pointed out the so-called steel-products division of Bethlehem Steel Co. represents a large category of fabricating activities including the manufacture of steel and wood sleeping, private, passenger, baggage, and mail cars, etc., which seem in no case to be connected with the production of rolled-steel products.

BETHLEHEM VERSUS MIDVALE-CAMBRIA

In that part of the Attorney General's opinion relating to the proposed Midvale-Republic-Inland merger, which failed because of the action taken by the Federal Trade Commission in Docket 905, it is said in the discussion respecting structural shapes which were sold "in the entire New England and eastern districts," that "Midvale reached every State in this territory" (exhibit 1). This fact is confirmed by studies made by the Federal Trade Commission of the production-and-distribution data supplied by 61 producers of rolled-steel products comprising something more than 90 percent of the total output of rolled-steel forms as shown by statistical reports of the American Iron and Steel Institute. These data covered the distribution of 14 principal forms of rolled-steel products to the several States and for export to foreign countries.

The ambitious nature of the Bethlehem program may be appreciated from a study of these data which show, among other things, that the median point of distribution of both structural shapes and plates (two of the very heavy tonnage items) for the 3 years 1919, 1920, and 1921 for which the data were accumulated was found to be east of but near Johnstown, Pa. In other words, more than one-half of the total consumption of rolled steel in the forms mentioned and including three forms of semifinished steel which were made in common and sold by Bethlehem, Midvale, and Lackawanna were distributed in the form of capital goods in that highly industrialized section of the United States east of a north-and-south line drawn through Johnstown, Pa., and north of an east-and-west line drawn through the same point. By reference to exhibit 7 it will be seen that this is the territory in which Bethlehem by these mergers acquired a considerable

freight-rate advantage over its principal competitors in the disposition of its finished steel.

Structural Shapes.

It is a matter of some regret that these data are too voluminous for reproduction here. It will be sufficient to repeat the Attorney General's findings that "in the entire New England and eastern districts [which are undefined and may or may not include the Philadelphia district] the Midvale sold 79,032 tons" in 1920. In his statement of the distribution of structural shapes by Bethlehem which had been made up for him by the producers from thousands of invoices covering each individual sale and which he had before him, the Attorney General omits to give the distribution to these districts but states:

In passing it may be observed that Bethlehem specialized in the production of structural shapes (exhibit1).

If we accept the authority cited by the Attorney General and the figures given in respondents' exhibit 444 in F. T. C. Docket 760, we must assume the structural capacities of the various plants for 1920, as shown on page 225 hereof, to be approximately as follows:

	<i>Tons</i>
Bethlehem Steel Co., Bethlehem, Pa.-----	710, 000
Lackawanna Steel Co., Lackawanna, N. Y.-----	225, 000
Midvale-Cambria, Johnstown, Pa.-----	184, 800

It is suggested that these capacities and the location of these works upon the map to a larger degree would be determinative of the potential competition which may have existed between these producers rather than the volume of distribution of any of their products to particular sections in which each was soliciting and selling.

In view of the Attorney General's observation with respect to articles which were not made in common by two companies that "as to such articles there can obviously be no competition between the two," and to the emphasis placed upon the importance of the special sections made alone by Bethlehem under letters patent, there should be no misapprehension as to the character and range in sizes of structural shapes which were actually produced and sold by Bethlehem and Midvale-Cambria. Accordingly there is appended as exhibit 27 an abstract from the rolling schedules and stock lists issued by Bethlehem and Cambria showing certain sizes and forms of standard structural shapes (including bar sizes) manufactured or carried in stock and offered for sale by both companies prior to the acquisition by Bethlehem of the properties of Cambria, which schedules and lists appear in the records of the Federal Trade Commission in Docket 962. It shows that those companies produced 43 different sizes of steel beams ranging from 3 to 24 inches in width and weighing 5.7 to 100 pounds per lineal foot. The exhibit also shows 37 different sizes of steel channels varying from 3 to 15 inches and weighing 4.1 to 55.0 pounds per lineal foot. It shows 10 different sizes of ship channels varying from 7 to 12 inches and weighing from 18.9 to 40.8 pounds per lineal foot. In equal leg angles it shows 45 sizes ranging from 2 by 2 inches to 8 by 8 inches, and in unequal leg angles 64 sizes varying from 2½ by 2 inches to 8 by 6 inches. Among the foregoing are 12 bar mill sizes which the Attorney General assumed were not made by Bethlehem.

Comprising a part of the evidence of the production of heavy structural shapes and shipment thereof to the same territory and

frequent sale to common customers, although perhaps at different times, are the invoice data appearing in F. T. C. Docket 962 covering shipments to Whitehead & Kales Co., Detroit, Mich., shown herewith as exhibit 28. While the abstract shows 28 cars as having been shipped by Cambria in the year 1917 and approximately 100 cars by Bethlehem in 1919 it is only a fractional part of such evidence and is offered only by way of illustration of the character and substantial quantity which was being produced and sold by each in the period prior to the acquisition by Bethlehem of Midvale-Cambria. It will be noted that this exhibit 28 also shows the shipment of a considerable number of cars of plates by each company.

A most illuminating bit of evidence as to the state of competition which developed between Bethlehem and Midvale-Cambria in the depression years of 1921-22 appears in connection with a contract which was made by Cambria with Russell Wheel & Foundry Co., Detroit, Mich., dated January 30, 1923, which was but 1 month prior to its acquisition by Bethlehem, for 7,000 to 8,000 tons of standard structural shapes, plates, and bars at a destination price of 2.29 cents per pound. The importance of the price at which the order was taken will appear later. A copy of the contract is submitted as exhibit 29.

As exhibit 30 there is submitted a tabulation of shipments applying upon this contract. It also shows that prior to January 30, 1923, the date of the contract, purchases were being made by Russell Wheel & Foundry Co. from Bethlehem in the early part of January; also that shipments were being made from Bethlehem and from Lackawanna, which had been acquired in the previous October. The only shipments made against this contract which were invoiced by Cambria were the two cars invoiced on March 28. Subsequent to that date all shipments were invoiced by Bethlehem and all or a considerable part of each (with the exceptions specifically noted) whether shipped from Bethlehem, Pa., or Lackawanna, N. Y., were shown as applying upon the contract made with Cambria. The delivered value of the steel covered by this contract, assuming it was completed, was \$366,400 and obviously constituted a part of the "\$5,261,000 of orders on the books of Midvale Steel & Ordnance Co. and Cambria Steel Co. on the date of the acquisition of their properties" (exhibit 14).

LACKAWANNA VERSUS MIDVALE-CAMBRIA

Steel Bars.

In exhibits to which previous references have been made there is evidence, which appears in a somewhat incidental way, of the production and shipment to common customers by Lackawanna and Midvale-Cambria of structural shapes and bars both prior and subsequent to the date of acquisition by Bethlehem of those companies. As shown heretofore the bar capacity of Lackawanna Steel Co. is given as 381,000 tons and that of Cambria Steel Co. as 440,000 tons. The opinion of the Attorney General with respect to the Bethlehem-Lackawanna merger contributes nothing on the production or shipment of bars by Lackawanna upon the erroneous assumption that they were not produced by Bethlehem. However, in his opinion upon the attempted Republic-Midvale-Inland merger, the Attorney General said in respect to merchant bars, "in point of tonnage this is the most important item in the steel industry" and that "in the New

England and eastern district Midvale sold 132,089 tons." The fact that Lackawanna and Cambria, as indicated by their bar capacities, were large producers of bars is shown by exhibit 31 hereto, which is an incomplete abstract of the shipping notices of the respective producers covering alloy steel bars to a fabricator at Mechanicsburg, Pa., "for account of the Ford Motor Co." In this instance the bars consisted of alloy rounds in six sizes varying from $\frac{5}{8}$ inch diameter to $1\frac{1}{8}$ inches, of which 20 cars are shown to have been shipped from Johnstown within a few months preceding the acquisition by Bethlehem of the properties of Lackawanna and Midvale-Cambria, and 44 cars in the 21 months succeeding those acquisitions. Although Bethlehem was a large producer of round bar shapes (as shown by exhibit 19 hereto) and a large seller of alloy steel in bar shapes, the record fails to show any shipments by Bethlehem for the account of the Ford Motor Co. until its acquisition of Lackawanna, after which time 83 cars were supplied by Bethlehem from the works acquired from Lackawanna. The abstract shows that prior to that acquisition Lackawanna shipped 3 cars of 3 different sizes of identically the same analyses. Having regard for the high quality of the material it can scarcely be said with propriety that these quantities were not substantial.

Structural Shapes.

In the absence of rolling mill schedules or stock lists issued by Lackawanna of the character shown in exhibit 27 as having been issued by Bethlehem and Midvale-Cambria, and in view of the Attorney General's method of measurement of potential competition and especially his statement that certain sizes of products do not compete with other sizes, there is submitted as exhibit 32 a partial abstract of certain invoices covering shipments of structural steel from the Johnstown works rendered by Cambria prior to the merger of that company with Bethlehem, and by Bethlehem subsequent thereto. This abstract covers purchases by Bellefontaine Bridge & Steel Co., Bellefontaine, Ohio, of shapes from the Lackawanna works of Bethlehem. The different items have been segregated so as to show the different sizes of structural angles, channels, and beams. The range in angle sizes is from $2\frac{1}{2}$ by 2 by $\frac{1}{4}$ inch to 6 by 4 by $\frac{3}{8}$ inch; in channels, from 6 inches by 8.2 pounds to 12 inches by 20.7 pounds; and in beams from 8 inches by 18.4 pounds to 15 inches by 42.9 pounds. Against these sizes and forms have been set forth certain tonnages shipped by each mill as evidence of the potential competition which then existed between two independent and competing properties which later came under the ownership and control of Bethlehem. Other evidence of shipment by each of these producers of heavy tonnages of structural shapes and the wide territorial distribution of those forms will appear later.

Steel Plates.

In his analysis of the potential competition for steel plates which existed between Bethlehem and Lackawanna and between Midvale-Cambria and other companies with which it was then proposed to merge them, the Attorney General does not contribute anything on the respective plate capacities of the producers. However, by referring to the Iron and Steel Works Directory of the United States and Canada for the year 1920, which he occasionally cites, it appears that the capacity of Bethlehem's Sparrows Point plant was 250,000

tons and Midvale Steel & Ordnance Co.'s Coatesville plant, 310,000 tons. That authority does not segregate the plate capacity of the Johnstown plant of Midvale-Cambria, which shows a total for plates, shapes, and bars of 980,000 tons. The break-down of this capacity as given by respondents in F. T. C. Docket 760 (respondents' exhibit 444) indicates the plate capacity of the Johnstown mill as 331,920 tons.

In his test of the extent of potential competition then existing between the different companies involved in the proposed Midvale-Republic-Inland merger (F. T. C. Docket 905) the Attorney General pointed out that "in the entire New England and eastern districts the Midvale sold 79,032 tons" of plates and "reached every State in this territory" (exhibit 1). In that part of his consideration of the proposed Bethlehem-Lackawanna merger (Docket 891) which related to steel plates not exceeding 78½ inches in width, he gave the total distribution of Bethlehem to those districts as 39,191 tons, saying that "81.72 percent of the total tonnage sold by the Bethlehem in 1920 found its way into the eastern district as against 70.20 percent on the part of Lackawanna" (exhibit 1). The January 30, 1923, contract between Cambria and Russell Wheel & Foundry Co., shown as exhibit 29, covered 500 tons of plates. There is offered as exhibit 33 an abstract of the invoices rendered by Bethlehem as applying on that contract covering 63 cars of steel plates, 39 of which are shown as having been shipped from Johnstown prior to August 1, 1923, and 24 of which were allocated by the Bethlehem Steel Co. to and shipped from, the Lackawanna mill in August and succeeding months. Again this is but a partial abstract showing shipments of plates in widths less than 78½ inches, the maximum width which the Attorney General said one of the mills was capable of producing.

The Attorney General had no occasion to express an opinion as to whether the consolidation of Bethlehem and Midvale would inhibit the law since the merger of those companies was not immediately involved. It would seem, however, that potential competition between them was implicit in the location of Bethlehem's Sparrows Point, Md., mill and the Coatesville, Pa., mill of Midvale, and the relative position of those works upon the map as shown in exhibit 7. The power which these mergers gave to Bethlehem to mass its production at any of these points under the merchandising system employed in the steel industry is obvious. The fact that it did so in subsequent years is shown by a partial abstract of invoices which were rendered by Bethlehem to the Belmont Iron Works of Philadelphia in 1925 and 1926, as shown by exhibit 34 hereto which covers large quantities of plates shipped in both years from the Johnstown works acquired from Midvale-Cambria in 1923 and the Sparrows Point, Md., works acquired from Maryland Steel Co. in 1916.

In order that there may be a proper appreciation of the relative size of Midvale-Cambria which is expressed in ingot capacity only in charts I and II, and the public interest in the preservation of that property as an independent unit, which should be apparent from its possession of enormous raw material resources, from its diversity of products, and from its situation midway between the large steel-producing centers in eastern and western Pennsylvania and within a few miles of the center of distribution of important rolled products, there is offered as exhibit 35 a copy of Bethlehem's exhibit No. 86 in a proceeding before the Interstate Commerce Commission in 1923

in I. & S. Docket No. 1929 (89 I. C. C. 609). This is a statement of carload shipments of manufactured iron and steel articles forwarded from Johnstown, Pa., in the period January 1 to September 30, 1923. While the break-down of these shipments is not provided, they doubtless consist largely of the finished forms for which Johnstown had the greatest capacity, i. e., structural shapes, plates, bars, and wire products. The proceedings did not involve freight rates in general but to a limited territory to which the distribution is shown. As will be shown later, some of these enormous tonnages were distributed to points served also by Bethlehem Steel Co. and Lackawanna Steel Co. prior to the merger of those producers. It will be noted also that the statement purports to cover distribution of Midvale-Cambria's Johnstown plant for the period of 3 months prior to the acquisition of that company by Bethlehem. In brief it shows:

	Cars	Pounds		Cars	Pounds
Alliance, Ohio	322	30,430,463	Niles, Ohio	85	6,824,617
Beaver Falls, Pa.	205	16,984,638	North Warren, Ohio	168	17,971,133
Buffalo, N. Y.	129	9,085,854	Pitcairn, Pa.	79	6,665,525
Cleveland, Ohio	385	26,260,393	Pittsburgh, Pa.	398	27,333,877
Greenville, Pa.	77	6,962,972	Rochester, Pa.	103	6,230,963
Martins Ferry, Ohio	66	4,347,393	Sharpsville, Pa.	50	5,194,480
McKees Rocks, Pa. (sub- urb of Pittsburgh)	60	6,237,428	Sharon, Pa.	232	24,476,725
Morad, Pa.	73	5,231,697	Verona, Pa.	101	9,997,953
Neville Island, Pa. (sub- urb of Pittsburgh)	135	9,195,065	Warren, Ohio	65	5,515,416
			Wheeling, W. Va.	81	4,509,086
			Youngstown, Ohio	112	8,655,935

As a fragmentary part of the evidence of the wide distribution of the principal heavy products of the three competitors here under consideration, there is offered as exhibit 36 an abstract of sales contracts covering plates, structural shapes and bars, entered into by Bethlehem Steel Co., Lackawanna Steel Co. and Midvale-Cambria with various consumers in 21 States and the District of Columbia during the year 1919, which contracts or abstracts thereof are contained in the records in F. T. C. dockets 760 and 962. The primary purpose of this abstract was to show that the producers involved in these mergers normally sold their rolled steel at so-called Pittsburgh-plus prices in various parts of the country. The conditions in 1919, 1920, and 1921 and the behavior of prices in those years will be referred to later. The exhibits are used in the present connection in a more incidental way as illustrating the general fact of territorial distribution and to avoid the unnecessary reproduction of similar and more comprehensive statistical data.

MERGER MOTIVES

We come now to a consideration of the probable motives underlying the attempted formation of North American Steel Corporation and the "mushroom growth of Bethlehem" which became the second largest consolidation of steel properties under one ownership.

Was not the United States Steel Corporation, whose objectives the Supreme Court had found it had failed to accomplish, the antetype of this second attempt and what was the reasonableness of its prospects of success?

Had it the justification of industrial conditions impelled by the necessity of integration or the economies of mass production, "or

compelled to unite in comprehensive enterprise because such had become a condition of success under the new order of things" which many assume was approved by the Supreme Court in the steel dissolution suit?

Was it, as the promoters alleged, an attempt in good faith to meet competition of the United States Steel Corporation which was said to be "almost in control of the markets"¹³ in 1922, or was it simply another attempt to maximize profits of a group of steel producers by establishing "a chain of factories * * * in all these markets and parallel the United States Steel Corporation" insured by the perpetuation of the same methods of price control which the Steel Corporation had found necessary to adopt in order to secure the full benefits of that consolidation?

In fairness and perhaps in the interests of accuracy, attention should be called to a seemingly frank statement as to the origin of the seven-company merger notion, referred to in the Senate resolution, which was made by Mr. John A. Topping, then chairman of the Republic Steel Corporation,¹⁴ on July 19, 1922, at a conference with the Federal Trade Commission during an attempt to formulate the nucleus of the North American Steel Corporation. Mr. Topping said:

I will be brief. As showing the intent of this organization from a business standpoint, Mr. Chadbourne¹⁵ came to me, and at first I didn't think it could be done. Later on, I thought the time was very opportune because of the bad conditions, and I thought it would be necessary, to save our position, to strengthen our organization. I wrote the first letter and called a meeting over my own signature at his suggestion, and in that letter I cited in a general way the reasons and the benefits that would accrue. In that letter I made no mention of the seven companies. I realized that there would be no lessening of competition even though it involved seven companies, because the production was so inconsequential as compared to the outside total production in this great pool that I passed that up as a matter of no significance whatever, and stressed the advantages of combination of our ability and capital with the Midvale resources and manufacturing facilities and the better service that we would be able to render, probably, through a chain of operations, and later on I called attention to the great wealth of our raw material in the Southern States. * * *

A concise statement of the "advantages of the plan" and "some of the essential reasons for the proposed unification of the properties of the companies" as it was furnished to the stockholders of those companies, is included herein as exhibit 37. No elucidation is made of the objective described in that statement as "the economic advantage of better distribution for the use of such products."

It has not been proved that we cannot have size enough for the greatest possible efficiency, and still stop short of monopoly. Would the Carnegie Co. have suffered seriously in its industrial efficiency if it had never joined the "Steel Trust"?¹⁶

"BAD CONDITIONS" IN THE STEEL INDUSTRY

What were the existing "bad conditions" to which Mr. Topping referred? What, if anything, had happened in the steel industry which furnished any justification for the statement that the United States Steel Corporation was "almost in control of the markets" at that time?

¹³ Transcript of record of conference at Department of Justice, May 24, 1922, p. 51.

¹⁴ File F. T. C. General $\frac{2}{35-1}$, p. 57-58.

¹⁵ Thomas L. Chadbourne, counsel for promoters of North American Steel Corporation and Midvale Steel & Ordnance Co.

¹⁶ J. B. and J. M. Clark, *The Control of Trusts*, the Macmillan Co., New York, 1914, p. 196.

It is thought that the answer to these questions will disclose one of the prime incentives to the mergers. The "bad conditions" referred to by Mr. Topping doubtless had reference to price conditions. Though much has been said and written concerning steel prices as they were quoted then and now, perhaps some brief explanation of the practices should be made here, since much of what follows, if we are to have an authentic record, must be largely in steel terminology.

For many years all rolled-steel products (except heavy steel rails) have been sold and invoiced only at destination or what have become known as "delivered prices," which included the transportation from point of origin to destination. Prior to 1921, however (and during the early months of that year), practically all price negotiations were carried on with customers in terms of "Pittsburgh basis," the mechanics of which were well understood by all buyers of steel. As the full significance of what follows may only be realized with a complete understanding of that method or system, the "established meaning" of the term as it appeared on large numbers of price quotations now a part of the files of the Federal Trade Commission is repeated herein:

The established meaning of "Pittsburgh basis" is that the price is f. o. b. Pittsburgh plus the official all-rail freight rate in effect from Pittsburgh to destination on date of shipment, less the official all-rail freight rate in effect from seller's works to destination on date of shipment (exhibit 38).

The net result of that method was that irrespective of point of production or shipment or destination, the total cost of steel to the consumer or fabricator of steel into other products, at destination was the equivalent of the price at Pittsburgh, plus the freight from Pittsburgh to destination.¹⁷ The latter element was easily ascertained and was known to every buyer of consequence. Before the invoice was received he knew exactly what the "destination price" would be.¹⁸

The Pittsburgh "base price" was, of course, an important and at times uncertain element in this combination. It was the only variable element in a very definite method of calculating the "destination price." It was as Judge Gary testified, "The advertised price so to speak," which was published in the trade journals.¹⁹

After an examination of exhibit 51 and with this explanation of the then current steel formula, the price conditions as reported in the industrial press, the somewhat technical testimony of witnesses and the tabulations herein will be readily understood.²⁰

To correctly understand what were probably the "bad conditions" to which Mr. Topping referred as existing in July 1922, it will be necessary to review briefly the general conditions for something more

¹⁷ "Under the Pittsburgh Plus method delivered prices all over the country were higher than the Pittsburgh price by the amount of the freight from Pittsburgh. * * * For example, a mill at Chicago, or other producing points, received a delivered price on sales at such point higher than the Pittsburgh base price by the amount of the freight from Pittsburgh to such point." The Basing Point Method of Quoting Delivered Prices in Steel Industry, by U. S. Steel Corp., hearings before the T. N. E. C., pt. 27, ex. 1418.

¹⁸ In most instances shipments were made "freight collect" at destination and the freight bill returned to the producer as a voucher for the amount of the deduction or allowance for freight from the face of the invoice. "No allowance to be made for spotting, switching, war tax, etc." Nor was a cash discount permitted on the amount of freight paid within the discount period for the obvious reason that the amount of freight varied from different shipping points, and no other means was devised to equalize this difference in discounts.

¹⁹ "Our instructions to our people were positive, to let us know if they wanted to make any changes in prices, and then if we made any changes we would put them in the trade journals, and let it be known to our customers generally; we would treat our customers all alike, or try to" (exhibit 3).

²⁰ For further explanation of and comments upon the basing point formula, see publications by the F. T. C. which appear as follows in hearings before the T. N. E. C., pt. 5, Practices of the Steel Industry Under the Code, Senate Doc. No. 159, 73d Cong., exhibit 338; Report of the Federal Trade Commission to the President in Respect to the Basing Point System in the Steel Industry 1934, exhibit 339; Report to the President on Steel Sheet Piling, 1936, Made in Response to Executive Direction, exhibit 340; Findings of Fact and Conclusions of the Federal Trade Commission in so-called "Pittsburgh Plus" case, F. T. C. Docket 760, 1924, exhibit 343. See also pt. 27, exhibit 2242 by Walter B. Wooden and Hugh E. White of the staff of the F. T. C., An Analysis of the Basing Point System of Delivered Prices in the Steel Industry as presented by the United States Steel Corporation in exhibits 1410 and 1418.

than 3 years prior thereto, as they are recorded in the industrial press and elsewhere, and especially the prices for various forms of steel in terms of the Pittsburgh base.

GENERAL CONDITIONS IN 1919, 1920, 1921

The abrupt termination of hostilities in November 1918 was, for well-known reasons, followed by a few months' hesitancy approaching industrial stagnation, during which negotiations were carried on between the Industrial Board of the Department of Commerce and the steel industry in an effort to agree on prices which would encourage buying and would be fair to the Government, especially for the use of the railroads which then remained under Federal control and were in urgent need of large quantities of steel for repairs and replacements.

In the annual report of the United States Steel Corporation for the year 1919 it is said:

During the first 5 months a comparatively small amount of new business was offered. This was followed by an increasing demand and broadening market for steel products (exhibit 39).

It confirms what has just been said respecting the understanding with the Industrial Board of the Department of Commerce.

On March 21, 1919, the Industrial Board of the Department of Commerce announced a schedule of prices for the principal standard steel products which, after extended investigation, it has concluded was fair and reasonable under prevailing conditions. These prices were a substantial reduction from those which had previously been quoted by steel manufacturers generally. The subsidiaries of this Corporation promptly accepted this schedule and have since followed it, notwithstanding there has been a steadily increasing cost of operation and production, and that the demands of customers for materials would have permitted higher prices. The decision of the Corporation in this particular has been influenced by the heretofore announced reasons which from time to time in the past have decided its policy in respect of prices under conditions where the necessities of consumers induce them to bid up the market. At the close of 1919 the tonnage of unfilled orders of the subsidiary companies for rolled steel products was 8,265,366 tons, * * *.

It has been suggested, in connection with exhibit 36, that 1919 was considered a more normal year than any immediately prior or subsequent thereto. The year 1920 was one of intense industrial activity, during which premium prices were asked by most, if not all, of the independents which were frequently much in excess of and frequently almost double the corporation's price. As prices for that year continued to climb these independents deferred shipments of their earlier orders and asked as much for immediate shipment as the traffic would bear, and by those tactics excited intense antagonism on the part of consumers whose projects were delayed, and some of whom were thereby subjected to suit for damages. The corporation, on the other hand, continued in effect the scale of prices which had been agreed upon with the Industrial Board of the Department of Commerce and endeavored to prorate its production between its old customers in about the ratio of their purchases in previous years, with the result that it went into the year 1921 with a backlog of more than 8,000,000 tons (exhibit 39). There is recited below an excerpt from the annual report of the United States Steel Corporation, which appeared in its statement of general conditions for the year 1920 (exhibit 39):

The demand for iron and steel products during the first 7 months of the year was large, the new business booked from month to month materially exceeding

capacity. Beginning with August there was a slackening in the volume of orders offering. The new business accepted during the year with the considerable tonnage of unfilled orders carried over from 1919 enabled the properties of the subsidiary companies to operate to very nearly full capacity except as operations were interfered with, especially from April to July inclusive, because of inadequate railroad service, arising principally from strikes and from shortage in fuel supplies. * * * No change was made during the year in the domestic prices for the principal steel products which were in accordance with the schedule announced by the Industrial Board of the Department of Commerce on March 21, 1919, to which reference was made in last annual report. This price schedule was adhered to by the subsidiary companies notwithstanding the demand for steel was such during the first half of the year that higher prices could have been obtained.

The corporation again exhibited some uncanny foresight in its endeavor to stop the price inflation to which others apparently saw no limit, for, as it correctly says, it made no increases in its prices base Pittsburgh, which was the sole basing point at that time, although its assembly costs must have increased enormously by the advance in freight rates which occurred in August of 40 percent in Central and Eastern States territory, and 33½ percent interterritorially. Its own statement of the situation is as follows (exhibit 39):

The price policy adhered to by the corporation, however, enabled it, notwithstanding substantial increased costs arising from advances in labor rates, in freight rates and higher cost for raw materials required to be purchased, especially fuel, to net considerable profits and to maintain operations at the degree above mentioned (80 percent of capacity), also to carry forward to 1921 a large tonnage of unfilled orders. These latter at December 31, 1920, totaled 8,145,122 tons of various classes of steel products.

Prominent among those so-called independents who were deferring shipment of orders taken at the so-called Redfield scale, and meanwhile accumulating as much premium spot tonnage at as high a price as the traffic would bear, were Bethlehem and Midvale-Cambria. To a lesser extent the same policy was pursued by Lackawanna (exhibit 38). Not until some time later did the independents begin to take seriously what some of their customers, who were also buyers from the United States Steel Corporation, had told them in resentment of their solicitation of premium orders from others, and delaying shipment to them of previous obligations at the Redfield scale, which was in effect, that they would thereafter trade with the steel corporation up to its ability to fill their requirements, and that others would have to buy back any patronage they might hope to get.

By February 1, 1921, the Steel Corporation was rapidly reducing its backlog tonnage, but at the end of the first quarter was able to report that it was operating at a ratio of 70 percent of capacity and obtaining the Redfield scale prices, while many of the independents were either shut down completely or operating at as low as 20 percent. In the meantime a series of events occurred which are matters of authentic record, which, together with what has just been said, may furnish some basis for the plea in support of the mergers that the United States Steel was "almost in control of the markets" at that time. The first of these events was recorded some months later in the annual report of Midvale-Cambria for the year 1920, which was being written late in February 1921. It recites that—

The halting trade which was in evidence at the close of the year 1920 continued through January 1921 so that the situation became extremely serious, not only to stockholders, but especially to the 30,000 employees who under normal conditions depend upon the operation of our mills for the daily living of themselves and their families.

The reason for the action which Midvale had taken earlier in the month was frankly stated:

While we appreciate that the causes of the halting trade are very complex, nevertheless we believe that one of the important factors in the hesitation of buyers, was that they believed, and rightly, that the market for steel products was falling. The psychology of the situation was that no buying of any importance would be done until the consuming interests were convinced that the market had fallen.

Rumors had occurred of market weaknesses at that time, but the following statement by Midvale in its annual report made more than a year later removed any doubt as to the identity of the interests which took the initiative. The Midvale report says:

We therefore, on February 4, 1921, announced radical reductions in the selling prices of our standard rolled products. This action was taken, not with the expectation that it would immediately start a buying movement, but with the belief that such a step must be the first one taken in order to restore normal conditions (exhibit 40).

The course which prices took thereafter is recorded in the various issues of "The Iron Age" and is confirmed in general by documentary evidence in the files of the Federal Trade Commission. Before examining the price chronology it may be well to recall what was said something more than a year later as to the price compulsion under which the merger companies were acting. The reasons publicly advanced in support of the mergers were naturally different than those suspected by the well-informed as to what was taking place. One producer urged that "the Steel Corporation's legality has been established by the Supreme Court and it has a control which no witness will dispute, expressly or by innuendo, and by which it can sell its products \$3, \$4, or \$5 a ton less than its competitors."

Another, speaking on May 24, 1922, said, "Practically speaking, the situation has been that the United States Steel Corporation was almost in control of the markets, and to stay in our company lost about \$6,000,000 last year."

Another said, "And Midvale Steel and Ordnance lost about \$3,300,000"; "and Briar Hill Steel Co. lost about \$5,308,000." Collectively they represented that the mergers "will strengthen these weak sisters in the business and enable them to more effectively compete for the benefit of every consumer in the markets of the United States."

Others urged that they were under serious disabilities in competing with the United States Steel Corporation, that they were "very anxious to overcome that disability not only to save our own investment, but by so doing to render a public service," and that they might "be able to maintain active competition whereas today, as we are now situated, we cannot maintain active competition except locally." They further urged that "the merger of these companies would in no sense eliminate competition as that term is legally understood, but would tend to maintain it" and "to definitely establish it in active form." They were very emphatic in their statements that no substantial competition existed between any two of them and that the sole purpose of the merger was to provide "for active competition for or against United States Steel Corporation." ²¹

²¹ Conference at Department of Justice May 24, 1922, and hearing before Federal Trade Commission July 19, 1922 (file 903-3-0-1).

This was less than 3 years after the Supreme Court had held that the corporation had no such power in or control over the markets, and it was advanced at a time when, as "Iron Age" correctly said, their prices varied "from \$7 to \$13 per ton below those of the corporation." ("Iron Age," March 31, 1921, p. 866, exhibit 41.)

The price history of the respective groups, as recorded in the files of the Federal Trade Commission, and as reported by "Iron Age," is a quite different story. In the Pittsburgh market letter of "The Iron Age" next succeeding the announcement by Midvale Steel & Ordnance Co. that it would quote prices low enough to bring business to its mills and that cuts of \$5 per ton below the Steel Corporation schedules were reported, it further says, "other independent interests have done nothing in the matter of price cuts" and that "the Steel Corporation subsidiaries meanwhile are holding to the level of prices which it has observed now for almost 2 years." It cited the corporation's operations as "still at an 80 percent or 90 percent rate," that "leading independent mills have run at 20 percent to 35 percent in the last week" (exhibit 41).

On February 17 it reported that Mahoning Valley independents, "on a lower cost basis are underbidding the Steel Corporation for business and are quoting prices on plates, sheets, and bars below the Industrial Board level" (exhibit 41). It commented on some quotations as "representing a drop of \$8 a ton in 2 weeks" and that "as far as its effect upon the prices and wage policies of the Steel Corporation is concerned the course pursued by the independents in the matter of price and wages has been nil" (exhibit 41).

The March 3 issue of "Iron Age" contains comments on a bid by Cambria Steel Co. on 350 tons of base plates for the Navy Department for delivery at the Philadelphia Navy Yard at what was the equivalent of \$6 per ton less than the then current price of the Steel Corporation. The Cambria Co. was also low bidder on 240 tons of bars at a price "equivalent to 2.25 cents base Pittsburgh, after allowing for Navy specifications," whereas the Steel Corporation was still adhering to the Redfield scale, which was on a basis of 2.35 cents base Pittsburgh (exhibit 41). On March 10 it reported that "Midvale Steel & Ordnance Co. is operating its Johnstown plant at about 40 percent of capacity. Other independents do not appear to have fared nearly so well in the drive for business, and taking those companies located in the Valley district, Pittsburgh and Wheeling, it may be said that 20 percent of capacity operation is a liberal estimate of what they are doing today" (exhibit 41).

These price concessions apparently continued to increase until on March 31 "Iron Age" reported some independent companies as quoting \$7 to \$13 per ton below those of the corporation. In the Pittsburgh market letter of April 12 it said, "All of the independents are now quoting steel bars at 2.10 cents base Pittsburgh, and 2.20 cents base Pittsburgh represents the minimum price idea of all manufacturers except the Steel Corporation on shapes and plates" (exhibit 41).

PRICE REDUCTIONS BY UNITED STATES STEEL CORPORATION EFFECTIVE
APRIL 13

In its analysis of the iron and steel market conditions appearing in the April 14 issue it is said:

On Tuesday afternoon, April 12, the Steel Corporation made public a list of reductions in its prices effective on the following day which brought bars down from 2.35 cents to 2.10 cents Pittsburgh, and plates and shapes from 2.65 cents and 2.45 cents, respectively, to 2.20 cents. The Steel Corporation also reduced billets from \$38.50 to \$37; sheet bars from \$42 to \$39; wire rods from \$52 to \$48 and tin plates from \$7 to \$6.25 per box, or but \$15 per net ton * * *. Some consumers had intimations last week of expected action of certain independent companies * * *. Buyers were allowed to cover at the lower prices just before the advance, and as a result bookings last week were larger than the average for March * * *. It is estimated that if its sheet and pipe prices which do not appear in the published list are reduced to those lately quoted by independent producers, its entire output will have come down an average of \$7 to \$8 a ton.

THE STEEL PRICES BECOME IDENTICAL

The effect of this action is described by "Iron Age" as follows:

The week has been featured by a revision of prices by independent steel manufacturers which, for unanimity, has few parallels in the recent history of the industry or since ruinous competition gave way to stabilized prices (exhibit 41).

Steel Corporation prices and those of a number of independent steel companies have become identical on some products and in close relation to others, as the result of several interesting developments in the past few days. The new turn has caused more stir than the steel market has known in months, and its effect on the volume of business is being widely canvassed (exhibit 41).

Obviously this action was no surprise as "Iron Age" had ascertained that certain consumers had intimations of the contemplated action and "were allowed to cover at the prices just before the advance." The course which prices took during the balance of the year is extremely interesting. A short period ensued in which they appear to have been "stabilized" to a considerable degree. On April 21 "Iron Age" said:

The chief effect of the coming together of independent and Steel Corporation prices by the raising of the former and the lowering of the latter was the closing of business by the independent companies on which they had made quotations below the new level. Thus the bulk of the new orders of the past week has gone to the independents, but at the same time the Steel Corporation has been helped by the reinstatement of business which had gone off its books while it was maintaining Industrial Board prices (exhibit 41).

On May 10 "Iron Age" published a report by its Pittsburgh observer that "steel prices again are beginning to take on a somewhat ragged appearance"; that "some of the independent producers had been led to 'substantial concessions from the stabilized levels,' but some makers are not prepared to yield." He reported that:

The Ford Motor Co., which recently put out an inquiry for 4,000 tons of hot rolled strips and for 5,000 tons of cold rolled strips, has placed the former at 2.40 cents base Pittsburgh, a concession of \$7 per ton from the regular market quotation, while the Texas Co., which is seeking 4,200 kegs of wire nails, was quoted \$3 base per keg, base Pittsburgh, or \$5 per ton below the recently established quotation * * *. (exhibit 41).

In the analysis of iron and steel markets contained in the June 23 issue of "Iron Age" it is said:

There is no longer any strict adherence to the prices announced by the Steel Corporation as effective April 13. Reports have gone through the trade that a formal announcement of lower prices would be made July 1 * * *. The market on bars and structural shapes is now about 2 cents, while 1.90 cents for plates, or \$6 per ton below the April 13 price, is not uncommon (exhibit 41).

Of particular significance is the report from Chicago, the home of Inland Steel, which was one of the companies concerned in these mergers, that "the weakness in bars is more pronounced"; that

"sheets are now about \$5 per ton below the April schedule * * *." The reports of departures from the "stabilized basis of April 12" apparently had reference also to conditions in the East as indicated by Bethlehem's announcement on July 4, to become effective on July 5, which are described by the Iron Age on July 7 as having been received in Pittsburgh with mixed emotions.

The reductions have been generally adopted by other independent companies, and while official announcement is yet to be made it is believed that the new prices will be adopted by the steel corporation.

The amounts of the deductions were said by Iron Age to amount to \$4 per ton for bars, plates, shapes, billets, skelp, sheet bars, and blue annealed sheets; \$5 for black and galvanized sheets; and \$10 for tin plate. It observed that "As to some products the announcement merely recorded what the market already had done" (exhibit 41).

A chronology of the base prices of subsidiary companies of United States Steel shows that the corporation put these lower prices into effect on July 6.²² On July 21 Iron Age reported that "cutting of the steel prices announced early in July has been more general in the past week, particularly in plates, structural shapes, reinforcing bars and sheets"; that "aggressive competition between Steel Corporation and independent steel has been seen in the Chicago market" and concluded from its analysis of quotations made on different forms of rolled steel in the Chicago district that "Pittsburgh basing has gone by the board in that district" (exhibit 41).

Of conditions in the East it reported:

At Philadelphia a 5,000-ton order for plates and shapes for a fabricating company went at 1.75 cents Pittsburgh for the plates and 1.80 cents for the shapes, whereas both are presumably 2 cents Pittsburgh. Several lots of about 100 tons reported in the New York market brought out prices of 1.80 cents and 1.85 cents, and in one case 1.70 cents.

A chronology of the Steel Corporation's base prices shows the establishment of the following, base Pittsburgh: (Per 100 lbs.)

July 26, plates	\$1. 85
July 26, structural shapes	1. 85
July 26, bars	1. 85
August 1, plates	1. 75
August 1, structural shapes	1. 75
September 26, bars	1. 65
November 1, plates	1. 65
November 1, structural shapes	1. 65
November 15, plates	1. 50
November 15, structural shapes	1. 50
November 15, bars	1. 50

(Commission's Exhibit 6855, Docket 760.)

The prices quoted above by United States Steel Corporation subsidiaries appear to have been about the going prices succeeding the announcement by Judge Gary that the Steel Corporation thereafter would meet competitive market prices as it found them. The Iron Age of September 1 quotes Judge Gary as saying:

"When the subsidiaries of the Steel Corporation ascertain to a certainty that large and important independents, so-called, are selling at prices materially lower than those which have been heretofore announced, our subsidiaries meet the new prices. They do not precipitate or lead in establishing lower prices (exhibit 41).

²² Commission's Exhibit 6855, F. T. C. Docket 760.

It stated further that—

The prevailing opinion is that the pronouncement has clarified the situation and that the fact that the Steel Corporation now will sell as low as anyone else is likely to exert a restraining influence on promiscuous cutting of prices. This will probably mean less selling to regular recognized customers by independents, because such buyers now will be able to match the lowest prices named by independents with those of the Steel Corporation subsidiaries (exhibit 41).

No material change in price conditions appears to have occurred for the balance of the year, either from the price chronologies available or the industrial press. An incident of some significance, however, occurred which is referred to in the December 15 issue of "Iron Age." Although not positively identified, it appears to have reference to and illustrate the aggressive policy of Midvale. "Iron Age" says:

A number of interests which have been regular buyers of plates from valley producers have been obliged, under the circumstances, to purchase tonnage elsewhere. One of the most striking instances recently involved 20,000 tons of plates sought by a Shenango Valley fabricator which had been a consistent buyer from a Valley maker for many years. An eastern interest, however, offered to produce the plates at a price which the Valley maker could not touch, and for that reason the business went elsewhere * * * (exhibit 41).

TERRITORY WEST OF PITTSBURGH

Some confirmation of events recorded by "Iron Age" is found in the brief chronology of prices in the West during 1921, which was furnished in the Pittsburgh basing case in 1922 (F. T. C. Docket 760) by the purchasing agent of a large agricultural implement manufacturer at Racine, Wis. Testifying from records which he had before him the witness said:

In February 1921 Midvale cut prices \$5 a ton. The other independents followed. The corporation maintained its \$2.35 price, but on April 1 the price of bars, beams, and structurals was apparently 2 cents f. o. b. Pittsburgh; and on April 12, 1921, the corporation reduced its price on bars to \$2.10 and on plates and shapes to \$2.20, I think, Pittsburgh; the independents advanced to these prices. By May prices were shaded to \$1.90, Pittsburgh, for bars and 2 cents for plates; and from July on, why, we heard that Chicago base was gradually creeping into the market; we heard that some people were able to buy bars from the Chicago mill at a Chicago base. Later on we found from our transactions that the corporation also was on a f. o. b. Chicago basis rather than f. o. b. Pittsburgh. * * * 23

In its comment upon the effect of the coming together of independent and steel-corporation prices, by the raising of the former and the lowering of the latter on April 13, which "for unanimity has few parallels in the recent history of the industry," the "Iron Age," in referring to the reinstatement of steel-corporation business, "which had gone off its books while it was maintaining Industrial Board prices" (exhibit 41), touches upon an important development which needs further elaboration. They were important factors in the circumstances referred to by Mr. Barr, in which, as "Iron Age" correctly said, Pittsburgh basing had gone by the board in that district.

Under the then current practice of tying all prices to Pittsburgh by the Pittsburgh-plus method, any cut in the Pittsburgh equivalent or Pittsburgh base, as it was known, wherever the cut may have occurred was considered as a cut in the market as a whole. As the prices made in Chicago territory and elsewhere were related by the prevailing freight rates to the Pittsburgh price, it was inevitable that any cut

²³ Harry G. Barr, purchasing agent, J. I. Case Threshing Machine Co. F. T. C. Docket 760, transcript pp. 1513-1514.

by Midvale-Cambria would, under the then-existing conditions, be reflected in the Chicago territory and west thereof. Some of the important fabricators in that section who were in competition with eastern fabricators, who were being supplied by Midvale-Cambria, Lackawanna, and other eastern producers, were securing part of their requirements from United States Steel Corporation subsidiaries and the Inland Steel Co., at Indiana Harbor, Ind., the latter being the only independent of consequence in that territory. The lower prices made by eastern independents were very promptly reflected in the Chicago territory and were adopted by Inland, thus giving to those fabricators trading with Inland a very considerable price advantage over those who had theretofore been dependent upon the United States Steel Corporation. These fabricators, finding their margins very much reduced under the then-existing conditions, advised the Steel Corporation that they could no longer continue to patronize it at prices materially higher than those asked by the independents, and that as a matter of self-preservation they must either have as low prices as their competitors or change their sources of supply. The Steel Corporation thereupon reduced its prices to some of those fabricators of structural shapes and plates, a fact which appears not to have become known to "Iron Age" for some time thereafter. The "aggressive competition" between the Steel Corporation and independent steel later seen by "Iron Age" as occurring in the Chicago market doubtless had reference to this situation as that competition progressed to a point where the corporation's Chicago and Pittsburgh prices were equal.²⁴

TERRITORY EAST OF PITTSBURGH

Without repeating any testimony of witnesses, a sequence of events occurring in the territory east of Pittsburgh, with which this study is mainly concerned, may be reconstructed from the mass of documentary evidence accumulated in the so-called Bethlehem-Lackawanna merger case (F. T. C. Docket 962). These data show that while prices were still upon a relatively high level, Midvale-Cambria departed from the established method and began selling certain of its customers on an f. o. b. mill basis (exhibit 42).

Lackawanna likewise commenced selling certain customers in the territory tributary to its mill on an f. o. b. mill basis.²⁵ To equalize the delivery cost of steel to those customers of Midvale-Cambria and Lackawanna who thus secured it at less than the then current "Pittsburgh-plus prices," Bethlehem and United States Steel were compelled either to quote a variable "base Pittsburgh" or to quote a "delivered price" which was equivalent to the cost at destination of purchasers from those companies. The evidence shows that the f. o. b. mill price of Lackawanna, while ordinarily 10 cents per hundred pounds higher than the then current Pittsburgh base price at Pittsburgh, was lower during certain periods than the then current Pittsburgh base. As exhibit 43 hereto there is offered an abstract of the invoices rendered by Lackawanna to four customers at Buffalo, N. Y., during a portion of the years 1921 and 1922, which shows these facts. It also shows the then current freight rate from Pittsburgh to Buffalo and under caption "Pittsburgh equivalent" gives the figures

²⁴ Commission's exhibit No. 6855, F. T. C. Docket No. 760.

²⁵ Commission's exhibits Nos. 1775, 1786 in F. T. C. Docket 962.

which it would be necessary for the Steel Corporation and Bethlehem to use as a "Pittsburgh base" in order to sell at an equal destination cost. It will be noted that these equivalents were for a long period 19½ cents per pound, or \$3.90 per ton less than the then current Pittsburgh price as quoted in the "Iron Age."

There is not only abundant evidence that both Lackawanna and Bethlehem did sell upon the basis of these reduced Pittsburgh equivalents, but conclusive evidence of the resulting net prices to the corporation is shown in its chronology of variable base prices in use in its eastern territory during that period (Commission's exhibit 6855, F. T. C. Docket 760).

The inference contained in the statements made by the promoters of these mergers has been shown to be without foundation. Their own Shylock policy of demanding every cent the traffic would bear in 1921 was entirely responsible for the extent to which "the United States Steel Corporation was almost in control of the markets." It has been shown in what manner the action of Midvale-Cambria, followed by Lackawanna, by other eastern independents and by Inland in the Chicago district had forced United States Steel Corporation to relinquish the unearned freight increment equivalent to the freight rate from Pittsburgh to Chicago and Pittsburgh to Duluth on the products of the newest of the corporation's mills. Likewise, in meeting the situation created by Lackawanna and Cambria in the territory more strictly tributary to those mills, the corporation was forced to discount to a very considerable extent its Pittsburgh-base price which it theretofore obtained everywhere. These facts gave color to the belief quite prevalent at that time that the Steel Corporation was smiling upon the Bethlehem program.

Although Midvale's action was taken when prices were on a relatively much higher level than obtained shortly thereafter, it was a terrific blow to Bethlehem, which was a staunch advocate of the Pittsburgh-plus system, which system gave both its Bethlehem, Pa., and Sparrows Point, Md. (Baltimore), works an unearned freight increment of more than \$6 per ton, the freight rates being more than \$6 from Pittsburgh to those points. Likewise, the system gave Bethlehem a considerable bonus above its Pittsburgh base price on practically all shipments to the large industrial eastern section of Pennsylvania, New York, and New England, to which its freight rates from Bethlehem and Sparrows Point were considerably less than from Pittsburgh.

The action taken by Midvale-Cambria also put a temporary halt to the common practice in the industry of carrying coals to Newcastle. It was against this disability that complaints were voiced by the promoters of the Republic-Midvale-Inland merger, who urged that under the then existing conditions (which were attributed to action of the United States Steel Corporation), the Youngstown Works of Republic could no longer reach the Chicago market because of a "disability of \$7.60 per ton freight charges."²⁶

Instances of the fact that this was common practice before the acquisitions are shown by exhibit 44 hereto, and subsequent thereto by Bethlehem Steel Co.'s exhibit No. 35 in I. & S. Docket No. 1929 (exhibit No. 35), which shows hundreds of cars of the same kind of steel moving from one producing point to another, and in some

²⁶ Transcript of record of conferences at Department of Justice May 24, 1922.

instances for hundreds of miles. Exhibit 44 is a partial abstract only of invoices rendered in 1919 by Bethlehem Steel Co. as representing shipments from Bethlehem and shipments by Cambria Steel Co. from Johnstown to a common customer at Buffalo, N. Y. (of which Lackawanna is a suburb), and by Lackawanna Steel Co. to the same customer. With minor exceptions, in which premium prices are indicated for prompt shipment, it shows consistent use of the Pittsburgh-plus system by the three producers. When Lackawanna opened the potential steel market of Buffalo by selling these and other consumers in the immediate vicinity of its mill on an f. o. b. mill basis comparable to the base price then current at Pittsburgh, it became very costly for either the Bethlehem, Steelton, or Sparrows Point works of the Bethlehem Steel Co. to continue shipments into the Buffalo territory, as will be apparent from the resulting "Pittsburgh equivalents" shown in exhibit 43. It is largely an arithmetical conclusion, therefore, that Midvale's action, on February 24, 1921, followed by Lackawanna and other important independents in the Pittsburgh and Shenango and Mahoning Valleys, was responsible for the fact that the Pittsburgh-plus system (then a single basing-point system) went by the board in the Chicago district, and likewise in a tremendously more important territory east of Pittsburgh, a territory in which more than one-half of the country's total of heavy steel products was distributed, and where Bethlehem received its highest prices under the Pittsburgh-plus system.

Small wonder that merger discussions were begun as a remedy for this condition, that Bethlehem should have so prominent a part in them, while the corporation was smiling on the Bethlehem program.

It will be recalled that Bethlehem acquired Lackawanna on October 10, 1922, and on November 24 of that year entered into agreements covering the purchase of all the properties and assets of Midvale Steel & Ordnance Co., with certain exceptions, and all the properties and assets of Cambria Steel Co. (exhibit 13). With those facts in mind attention is directed to exhibit 45 hereto, which is statistical evidence of several interesting facts. It is a partial abstract of the price quotations by Bethlehem on steel bars (which Attorney General Daugherty said Bethlehem did not produce) to the Philadelphia & Reading Coal & Iron Co., Philadelphia, a specimen of which is submitted as exhibit 46. Among other things shown by exhibit 45 is the rapid increase in the Pittsburgh base (Pittsburgh equivalent) prices used by Bethlehem in the quotations in question, and the price, base Pittsburgh, published by "Iron Age" in the issue next succeeding the quotations. The Carnegie Steel Co. (United States Steel subsidiary) bar price "base Pittsburgh" subsequent to October 1, 1922; is not a matter of record in the files of the Federal Trade Commission. Of equal interest, however, are three other facts: First, that a \$4 per ton advance in prices occurred while mergers were under discussion with the Department of Justice and the Federal Trade Commission in the spring of 1922; that an \$8 increase occurred between that time and the acquisition by Bethlehem of Lackawanna in October; and that another increase of \$8 per ton occurred shortly after the acquisition by Bethlehem of Midvale-Cambria in the spring of 1923. An equally interesting and significant fact is that the f. o. b. mill quotations disappeared with the acquisition of Lackawanna and the options obtained on the Midvale-Cambria properties,

and that the merchandising of steel was again put on a Pittsburgh basis in that enormous consuming territory east of the Indiana-Ohio State line and north of the Potomac River, which was not controlled by the dual base which had been established in Chicago. The exact language in which that was done is repeated in exhibit 46 and illustrated by exhibit 47. An additional fact worthy of note is that the acknowledgment of orders of a Baltimore customer covering commercial quality steel bars states that shipment may be made from either the Johnstown, Pa., or Lackawanna, N. Y., works, both of which properties had been acquired by Bethlehem in the previous 9 months.

Although the Attorney General could find no evidence of actual or potential competition between any of these companies, there is submitted as exhibit 48 a tabulation of invoices covering shipments by Midvale-Cambria into the city of Bethlehem in the 2 years preceding the merger, which aggregate more than 600 tons of plates and almost a thousand tons of structural shapes.

Among other interesting facts which may be glimpsed in exhibit 46,²⁷ reference has already been made to the terms in which steel prices were quoted as distinguished from the terms in which they were actually sold or invoiced in the period prior to or immediately succeeding the action taken by Midvale in February 1921. In addition to quoting a certain figure as "base Pittsburgh; Pittsburgh basis," which was commonly understood, it was frequently the practice to repeat "the established meaning of Pittsburgh basis" as shown in exhibit 38. With the introduction of a dual base at Chicago in 1922 prices could no longer be quoted in that manner in the territory west of Pittsburgh in which the destination cost to the consumer might be made up of the lower alternate of the Chicago base, plus freight. Accordingly, in that territory it immediately became the practice to quote a "destination" or "delivered" price. In the territory east thereof no such compulsion appeared, and subsequent to the acquisition by Bethlehem of Lackawanna and Midvale-Cambria, Bethlehem Steel Co. continued, for about 3 years, to quote at a specific price per pound "base Pittsburgh, Pittsburgh basis"²⁸ (exhibit 46) until on or about March 19, 1924, when quotations were revised in terms of a price "---- per pound, base, mill, freight equalized with Pittsburgh." This method continued to about July 30, 1924²⁹ (exhibit 45, No. 21395).

In the meantime, on July 21, 1922, the Federal Trade Commission issued its order against the subsidiary companies of United States Steel Corporation to cease and desist from the Pittsburgh-plus practice, which, of course, ran against United States Steel Corporation subsidiaries situated in the territory east of Pittsburgh, of which there were several. On or about August 27, 1924, Bethlehem changed the language of its quotations to show a specific price per pound "base, f. o. b. mill, with carload freight (or less than carload) allowed to -----," the particular destination³⁰ (exhibit 45, No. 21414).

²⁷ While specific reference has not heretofore been made to the factual showing contained in exhibit 46, it will be recognized as containing matters to which reference has been made, especially to the language employed in price quotations, to the price levels obtaining at different times, to the premium prices asked by certain independents during the periods of high and low demand, to the then current Pittsburgh base prices as published in Iron Age and to the then current prices of Carnegie Steel Co., a United States Steel Corporation subsidiary.

²⁸ Commission's exhibits 21393-21395-21396-21398-21399-21400-21401-21406, inclusive, in F. T. C. Docket 962.

²⁹ Commission's exhibits 21407 to 21413, inclusive, in F. T. C. Docket 962.

³⁰ Commission's exhibits 21414-21415-21416, F. T. C. Docket 962.

In the Iron Age of September 25, 1924, the issue next succeeding the date of issue of notice by United States Steel Corporation subsidiaries of their intention to comply with the order of the Federal Trade Commission "insofar as it is practicable to do so," there appeared a Philadelphia dispatch saying:

President Eugene Grace of the Bethlehem Steel Corporation announced last week that his company would follow the lead of the Steel Corporation in abandoning the Pittsburgh price base.

A week later Iron Age discovered that abandoning the "Pittsburgh price base" simply meant a change in the method of quoting steel and none whatever in the cost to the consumer in the territory east of Pittsburgh, as has been shown heretofore. Comment upon this change is contained in the Philadelphia market letter appearing in the October 2 issue, in which it is said:

There is nothing to indicate that the abandonment of Pittsburgh basing for steel products by the United States Steel Corporation and some of the independents will have any marked effect upon prices or conditions of doing business in the Philadelphia district. So far the only change is that most of the mills are quoting delivered prices rather than f. o. b. prices,³¹ but the actual cost of material to the consumer figures out exactly the same. In fact, the eastern mills, in making quotations, simply include the freight from Pittsburgh in their delivered prices (exhibits 45-50).

A suggestion that a change in the method of quoting only was contemplated in Mr. Grace's announcement is contained in the press statement of a Baltimore steel man 2 days earlier, in which he said:

Of course, the Sparrows Point plant of the Bethlehem Steel Co. would stick to the Pittsburgh base because otherwise it would be entering into competition with its own Pittsburgh plants (Johnstown); the Bethlehem Steel Co.'s Pittsburgh prices will control its Sparrows Point prices, and the prices at all its other plants.

This method continued in effect on steel sheets, one of the chief products of Bethlehem, until June 1938. This fact was made plain by the testimony of President Grace of Bethlehem before the Temporary National Economic Committee in respect to prices charged for sheets when sold to customers in Baltimore (exhibit 52).³²

As illustration of the fact that United States Steel and Bethlehem recognized a common interest in the maintenance of Pittsburgh plus in the territory in which Bethlehem had acquired such predominating

³¹ A stock defense of the basing point system has been, and still is, the contention that the destination price, or the terms in which the invoice is rendered under a basing point system was adopted at the insistence of buyers who wanted to, and otherwise would be unable to, compare "laid down costs." Invoices for steel have been rendered in that manner, which is in accordance with the mechanics of a basing point system and was in accord with the established meaning of Pittsburgh basis. Steel was not, however, quoted in that manner until after Pittsburgh-plus had gone by the board in the Chicago district in 1921.

³² Mr. Grace attempted to justify this practice on the ground that theretofore the Sparrows Point mill, 12 miles distant from Baltimore, "wasn't important in the total picture of sheet production" (hearings before the Temporary National Economic Committee, pt. 19, p. 10611, et seq.). In this connection, it may be interesting to note that the Iron and Steel Works Directory of the United States and Canada for the year 1935 shows Bethlehem's Sparrows Point capacity for steel sheets as 180,000 tons and that of the Eastern Rolling Mill Co. of Baltimore as 90,000 tons. Both producers based their Baltimore prices on Pittsburgh plus. Under conditions approaching free competition and subject to those competitive forces known as the law of supply and demand, the movement of a homogeneous commodity is from surplus to deficit areas. The Pittsburgh-plus prices at Baltimore could be justified as competitive only when some portion necessary to supply that point would have to come from Pittsburgh. Under such circumstances, both Bethlehem and Eastern Rolling Mill would be expected to ask the Baltimore consumer the equivalent of the Pittsburgh price plus the cost of freight to Baltimore, or as near that aggregate as would enable him to sell his product. However, no such conditions of supply and demand exist in Baltimore. The distribution of Bethlehem sheets is not definitely known, but there is evidence before the Senate Committee on Interstate Commerce to the effect that in 1 year, 40 percent of Eastern Rolling Mill's production was shipped to points west of Pittsburgh. In other words, both of the Baltimore producers systematically held their Baltimore customers up to a Pittsburgh-plus formula price, while permitting Pittsburgh producers to sell in Baltimore at equal "destination prices," and dumped their thus created surpluses west of Pittsburgh or elsewhere at materially lower prices. Without such reciprocal action, the Pittsburgh-plus or multiple basing system would be unworkable.

control, there is offered as exhibit 53 a partial abstract of invoices covering steel products in the form of consumer goods, i. e., plain wire and wire nails which were sold by Bethlehem and American Steel & Wire Co. (a steel corporation subsidiary) to a common customer in the New York metropolitan area during the years 1924 to 1926, inclusive. The units of sale are such that the destination prices may be readily resolved into a Pittsburgh equivalent. It will be noted that the prices of both producers, both prior and subsequent to September 16, 1924 (the date of the steel corporation's notice of its intention to comply with the order of the Federal Trade Commission), differ on both products from the Pittsburgh base price by exactly the same amount, showing that the same freight element was contained in the delivered price during both periods.

A noticeable feature of the mechanics of Pittsburgh plus was the addition by Bethlehem to the face of the invoices covering shipments from Johnstown of an amount equal to the freight differential of $1\frac{1}{2}$ cents per hundredweight in favor of Johnstown, "to equalize with Pittsburgh" (notes c and d, exhibit 53).

It is understood that this is still current practice as to these particular steel products.

Another fact which, although not strictly a part of the matter under discussion, is intimately related thereto and whether it be effect or coincidence should not go unmentioned. It concerns the indirect means of increasing prices by the use of so-called extras, which method was used several times before these acquisitions, and at least once since. One of the two methods of doing this, which has been the subject of considerable complaint by users of steel as capital goods, has been to increase the quantity extras applicable to the smaller quantities, which had the alleged effect of unduly burdening the small fabricator. It will be recalled that there were many and drastic increases made under the so-called Code of Fair Competition for the Steel Industry.³³

On March 30, 1923, the Midvale properties were transferred to Bethlehem Steel Co. and the Cambria properties to Bethlehem Steel Products Co. (exhibit 14).

On or before July 1 there was published and made effective on that date by steel producers generally, a new list of extras for various sizes and shapes of steel bars and small structural shapes, of which each of the merging companies were large producers. This list materially increased the then existing extras for machine cutting and the smaller quantity differentials to a lesser extent. In several instances it imposed extras for which none had theretofore existed. The principal price increases at this time were, however, applicable to the price extras for sizes and shapes, which in many instances were more than 100 percent. The range was from a minimum of 20 percent to a maximum of 140 percent and appears to have averaged about 60 percent. The range of increase in cents per 100 pounds was from 5 cents to \$1. A comparative table of these extras with those in effect prior to the acquisition of Lackawanna and Midvale-Cambria is included herein as exhibit 49. No intelligent estimate of the weighted average seems possible, but enough is known concerning the importance which the industry attaches to their promulgation and the

³³ Practices of the Steel Industry Under the Code, March 1934, hearings before the Temporary National Economic Committee, pt. 5 (exhibit 338). Report of the Federal Trade Commission to the President with Respect to the Basing-Point System in the Iron and Steel Industry, November 1934 (exhibit 339, p. 7).

maintenance activities which have taken place in the technical committee of the American Iron and Steel Institute to furnish basis for the accusation that this source of additional revenue has been much overworked. Some of these collective activities, at least, have been carried on in a rather high-handed manner, as they were under the guise of a code of fair competition for the industry during the existence of N. I. R. A. These activities are not new. They are as old as the well-organized industry, and are indicated by the testimony of a former vice president in charge of sales of Carnegie Steel Co., who testified in the *Pittsburgh basing case* from personal knowledge. He said:

I sat in what was known as the bar association from 1897 on. That was what was called a gentlemen's agreement. It was not a pool. It was nothing more or less than an association to help stabilize prices, but more particularly to stabilize extras, which had been very unscientific in their manner, and went to a cost basis in order to establish scientific extras, which were almost more important than the base price, and many of the associations dealt with matters of that kind quite as much or more than they dealt with prices; * * * ³⁴ (exhibit 51).

In the hearings before the T. N. E. C. it was frankly admitted by Mr. Fairless, president of the United States Steel Corporation, and Mr. A. C. Adams, a vice president, that the matter of extras was talked over with competitors respecting the changes made in May 1938, that because of overlapping of certain products classifications and varying extras within each classification, there had been "a state of confusion from a price standpoint" (verbatim record 219-222). Testimony to the same general effect was given by Mr. Eugene G. Grace, president of Bethlehem (verbatim record p. 289).

When the members of an industry will collectively agree upon base prices to the extent shown by exhibit No. 2214 before the Temporary National Economic Committee,³⁵ there appears no reason to suppose that they will not agree also upon a subject which, in the opinion of a vice president in charge of sales, was "almost more important than the base price."

IN DEFENSE

Brief reference has heretofore been made to the contentions advanced in support of these mergers. Among those urged upon the Government were the economies which might be effected in the wages of management. In view of the enormous bonuses commonly known to have been paid by Bethlehem Steel Corporation, this contention may be passed without further comment.

The necessities for effecting economies in order to meet the competition of United States Steel Corporation, represented as then almost in control of the markets, have been shown to be without foundation.

Another alleged objective, i. e., "increased economy resulting from the mining of a larger tonnage of ore, coal, and limestone, under one control" may conceivably have been possible of accomplishment to some extent. This latter objective is coupled with "the economic advantage of better distribution for the use of such products" whatever that may mean (exhibit 37). The remaining objectives advanced as justification were the possible economies of mass production

³⁴ Col. Henry P. Bope, vice president, Carnegie Steel Co., transcript of record in F. T. C. Docket 760, pp. 10857-10870.

³⁵ Hearings before the Temporary National Economic Committee, pt. 27, exhibit No. 2214. See exhibit 52 hereto.

and sale of finished steel. It may be conceded that in the manufacture of steel as in all other manufactured products, one may conceivably reach a point of optimum efficiency. The progress toward such a theoretical goal, however, does not involve the acquisitions and control under one management of thoroughly integrated plants located several hundred miles apart. Economies inherent in that situation are confined quite largely to those which may be effected in the wages of management and in many cases these seem to be exaggerated.

The evidence available in this case points very definitely in other directions. The comparatively higher earnings of the smaller steel producers, shown in exhibit 4 hereto and in more positive form in other evidence before the Temporary National Economic Committee, suggests very definitely that the economic effects of going too far in the accumulation of scattered properties are not less drastic than the legal penalties and frequently become effective much more promptly.

Midvale-Cambria had become an aggressive competitor of Bethlehem in many lines and was engaged in extensive alterations, repairs, and renewals of the Cambria properties at Johnstown (exhibit 40). Through its control of Cambria Iron Co. it had enormous reserves of domestic ores which Bethlehem lacked; it had an aggressive sales force and had accumulated an enormous cash reserve. Following the lead of Midvale-Cambria, Lackawanna had also resorted to price competition by selling on an f. o. b. mill basis in 1921-22, which deprived Bethlehem of much of the unearned freight increment from Pittsburgh which Bethlehem had been enjoying on all its products (other than rails), which amounted to something more than \$6 per net ton in eastern Pennsylvania and substantial amounts elsewhere. This unearned freight increment on the sheet capacity of the Sparrows Point mill alone, if sold where Bethlehem received its highest net price, would amount to more than \$1,000,000 annually. Furthermore, Lackawanna enjoyed a low-assembly-cost location on the Great Lakes to which it had moved from eastern Pennsylvania 20 years previously. It likewise enjoyed equal or lower distributive freight rates on its finished products to many consuming points in the East, and a pronounced advantage over Bethlehem in its distributive costs both by rail and by water to the growing West. These advantages are reflected in the comparative increases in steel-producing capacity at Lackawanna and at Bethlehem. Although Lackawanna was larger than Bethlehem when acquired, in the 15 years of ownership by Bethlehem, 1923-38, the ingot capacity of the Lackawanna plant was increased by 752,000 tons. In the same period the Bethlehem plant was increased but 428,000 tons. A more striking contrast is presented in the ratio of increase in the Sparrows Point plant acquired from the Maryland Steel Co., which, in the 15 years under Bethlehem ownership, was increased 2,115,000 tons. It is also noticeable that in the same period of Bethlehem ownership, the ingot capacity of several of the plants acquired in other locations was materially reduced. The outstanding instances were the Cambria plant at Johnstown which was reduced by 411,000 tons, the Wilmington plant by 144,000 tons, and the Midvale plant at Coatesville by 550,000 tons. Not without significance also is the comparatively recent transfer of the wide plate mills from Coatesville to Sparrows Point.

This history of Bethlehem's development shows only a moderate increase in the original steel-making unit at Bethlehem and a tremendous expansion of some of the acquired plants and a drastic reduction in or complete abandonment of others. It has not been that gradual expansion of a plant, by a somewhat trial-and-error method, to that theoretical maximum in which size produces an optimum of efficiency. Rather, it has on three occasions acquired competitive plants each of which were at the time considerably larger than the then-existing Bethlehem plant (chart II).

There is usually a limit beyond which the economy of management by the enlargement of plant ceases; and where this appears and combinations continue beyond this point, the very fact shows intent to monopolize and not to economize.³⁶

In the field of manufacturing and marketing it is doubtful if a monopolistic combination is in many cases the most efficient form of organization. We have already learned that the efficiency of large-scale production and combination has very real limits. There are few important lines of industry in which this limit would not be reached long before the would-be monopolist has become great enough to absorb the whole.³⁷

* * * Another characteristic of merger periods is the tendency to misinterpret the significance of mere size for efficiency and economy of operation and to ignore the principle of diminishing returns. The idea then takes unusually strong hold upon the public mind and the business community that if anything is good, a hundred times as much is more than a hundred times as good; and especially that if you can make and sell a thousand units of something at a profit you should be able to sell a million units at more than a hundred times the profit. Belief in the exceptional economies of mere mass production has been more characteristic of the period since the war than it was of earlier merger periods, but it is remarkable that it should be accepted with so little question by the business world in a period when the problems of excess capacity and the difficulties of distribution have been so acute and so widely discussed. The fact that mergers in recent years have been so largely in the distributive fields, however, is some indication that these difficulties are being recognized. * * *³⁸

STEEL MERGERS AND THE LAW

Prior to the consummation of the mergers referred to herein certain conclusions of law concerning them were reported to the United States Senate by the then Attorney General. These conclusions were reached after a study of data requested by and prepared for him by the steel producers after an examination and analysis of hundreds of thousands of invoices covering each individual sale. The opinion, however, was based mainly on figures for the year 1920 which were considered fairly representative. The basic facts found as to each contemplated merger and the opinions rendered respecting them were substantially alike and were to the effect that neither would violate either the Sherman Antitrust Act nor the Clayton Act.

While this study is concerned primarily with the facts surrounding these mergers rather than what may have been the law concerning them, it cannot entirely avoid reference to the legal decisions and to the logical and practical consequences of those decisions, which are offered in full as exhibit 1.

In respect to the status of the proposed Bethlehem-Lackawanna merger as related to the Antitrust Act (F. T. C. Docket No. 891), the Attorney General agreed that:

³⁶ William Howard Taft, the Antitrust Act and the Supreme Court, p. 128.

³⁷ *Elementary Economics (Industrial Monopoly and Its Control)*, vol. 2, p. 71. Fred Rogers Fairchild, Knox professor of political economy; Edgar Stevenson Furniss, professor of political economy; Norman Sidney Buck professor of political economy; Yale University, 1931.

³⁸ *The Merger Myth*, by Virgil Jordan, chief economist, National Industrial Conference Board.

Every combination formed for the avowed purpose of restricting interstate trade or of acquiring a monopoly therein falls, of course, within its condemnation, and

Manifestly, the evils that may be inflicted upon the public, such as enhancement of prices, are of paramount concern.

The promoters, however, alleged other motives and the Attorney General, after what he described as an exhaustive investigation, declared:

I am persuaded that the motive which prompts the Bethlehem to acquire the Lackawanna plant is the sole desire to secure greater efficiency and economy in the production, handling, and distribution of steel products and that the thought of acquiring a monopoly or of enhancing prices was never present. The whole transaction from beginning to end impresses me as being thoroughly clean, honest and straightforward.

He rendered this opinion without any mention of the fact that 10 days prior thereto, he was advised by the Western Association of Rolled Steel Consumers that in behalf of its membership of 800 major western manufacturers, it was challenging before the Federal Trade Commission the practice in the steel industry known as Pittsburgh plus. The association suggested that the practice "must of necessity be intimately connected therewith" and urged that he inform himself concerning it through the Federal Trade Commission and include the subject in his investigation. Although supplied with considerable data concerning it and advised of the possibility that the mergers might render the Commission's orders ineffectual, the suggestion was apparently ignored (exhibit 53).

On the matter of size, he added:

I need not stop to point out that in *United States v. United States Steel Corporation* (251 U. S. 417), the Supreme Court refused to declare illegal a combination of much greater magnitude * * *

After an observation that restraint of trade was charged in that case and found impossible of attainment and that price control was abandoned in good faith before suit was brought, the Attorney General concluded that—

The merger now under consideration will be neither an actual monopoly nor even an attempt to monopolize and, of course, the decision just referred to is controlling.

In the steel dissolution suit, the Supreme Court was careful to say that—

It is this flexibility of discretion—indeed an essential function—that makes its value in our jurisprudence—value in this as in others—

that—

The appropriate relief in each instance is remitted to a court of equity to determine * * *

Exactly what was meant by the statement that "the decision just referred to is controlling"? Is it to be inferred that the Supreme Court, having failed to condemn an aggregation of 45 percent of the country's steel capacity because mere size is not an offense, must approve a 15 percent merger, irrespective of other considerations than those of mere size, for the same reason? If so, by what reasoning could approval be withheld from another aggregation of 40 percent? Would it then be contended that this combination of 100 percent of the country's steel capacity in three concerns did not violate the Anti-trust Act?

It is obvious from the Attorney General's repeated references to the relatively minor percentages which each of the merging companies produced of the entire country's production of several forms of steel, that he gave great weight to the contention of the promoters that the aggregate production of those companies would be a comparatively minor part in what was urged as "this big pond of production."³⁹ It is also obvious, from the method of acquisition adopted by the merging companies, that they recognized and avoided the difficulties which might confront them under the Clayton Act via the stock acquisition route, in the inhibition against such course—

where the effect of such acquisition may be substantially to lessen competition between them or to restrain commerce in any section or community * * *.

The capital structures of the acquired companies and other interesting facts concerning them, as shown by the consolidated balance sheet and profit and loss statements filed with the Committee on Stock Lists of the New York Stock Exchange by Bethlehem Steel Corporation, are appended as exhibits 54 and 55 for Lackawanna and Midvale-Cambria, respectively, for the year next preceding their acquisition.

Whatever may have been the status of these mergers under the law, the obvious fact is that the net result was—

(a) to restore and perpetuate the then-existing basing point system of merchandising steel which had temporarily broken down over a wide area through the action of Midvale-Cambria and Lackawanna;

(b) to give Bethlehem almost complete domination over a territory which at that time consumed more than one-half of the country's total production of certain important forms of rolled steel, by taking over competitors, a method which insures the most certain and complete power over supply and over prices which it has been possible to devise.

Will it again be seriously contended that this aggregation "having been given legal sanction, the necessary consequence of its being and the natural result of its operation must be accepted also"; that irrespective of the public or private importance of the price of a basic material such as steel (to which is added more of human labor in the further conversion into consumer goods than any other), the producer of that raw material may abolish all semblance of an open market, create his own conditions of supply and "read his price from the flight of crows or the Ouija board."

The record of Bethlehem's price policy in this region for several years succeeding the mergers is perfectly clear. The production facilities of United States Steel in that area were so relatively insignificant that it apparently felt it wise to follow Bethlehem's leadership in the matter of prices in that region, protected as it was by Bethlehem's powerful acquisitions at Johnstown and Buffalo which faced the corporation's Pittsburgh mills on the north and east. Having such a preponderance of the completely integrated steel capacity in this

³⁹ "Inasmuch as all steel products are made from this article it will be well to give figures showing the ingot capacity of the entire country and the percentage represented by Bethlehem and Lackawanna, with figures designed to contrast their capacity with that of the United States Steel Corporation and other producers. The country's total rated annual ingot capacity is 50,440,000 tons. Of this amount Bethlehem and Lackawanna's combined capacity is 9.7 percent; that of the United States Steel Corporation is 45 percent; that of all others is 45.3 percent. In other words, the rated ingot capacity of the United States Steel Corporation is about five times that of the Bethlehem and Lackawanna combined." Letter from the Attorney General of the United States, S. Doc. No. 256, 67th Cong., 2d sess. (exhibit 1).

territory, Bethlehem doubtless felt that it could afford to risk consumer opposition to the Pittsburgh-plus practice in that territory until it chose voluntarily to abandon it. This it did for several years despite the implication contained in Mr. Grace's announcement in September 1924 that it would "follow the lead of the United States Steel Corporation in abandoning the Pittsburgh-price base" (exhibit 50).

As a matter of fact the level of prices which are the starting point of calculation from which current "delivered," or "destination" prices are reached, would be no less arbitrary if read from the ouija board.⁴⁰ It is in no sense the price in a market. During the forty-odd years since the inauguration of the various delivered-price systems, the market has become, in the language of their defenders, synonymous with the point of delivery in a general area of consumption. The term "market" has been deliberately perverted by the organized defense of these systems so that the result, i.e., identical destination prices, may be pled as the result of perfect competition; and textbooks produced by the bale in support of that contention, something hardly to be expected in an imperfect world, but which exists to the exact cent or minute fraction of a cent per hundred pounds. On this point the testimony of Dr. Ripley, among several other noted economists, may be cited:

The market, as I see it, is not at the place where some steel and some freight and some wind have all three been hitched up together to form a kind of a combination—in other words, where an artificial freight rate, which never was paid on that product, is figured in on it, making up the delivered price. That does not seem to me like a market. I think entirely in terms of that market at Chicago, where we are dealing only with steel.⁴¹

So much has authoritatively been said as to the purposes of these so-called "base prices," their origin, development, and current use that there is now little excuse for disagreement on these essential points in any fair-minded discussion of the matter.⁴² The chief point of disagreement is the industry's insistence that the system, of which these base prices are an integral part, is a highly competitive system,⁴³ whereas some critics of it have endeavored to point out that it does not conform in most vital respects to the economic concept of competition but is rather plainly marked as a deliberate plan to evade it.⁴⁴

Within the past 4 years there seems, however, to have developed a growing realization on the part of the industry as to some of the economic implications contained in a system the avowed purpose of which was, as Mr. Tower has said, to enable all members of the industry "no matter where located" to "sell his products in any part of the country in competition with all other producers" and "without disad-

⁴⁰ They are prices only in a very limited sense. The "delivered price," the only term in which steel is sold, includes another factor. The potential steel markets of the country, Pittsburgh, Chicago, Birmingham, Buffalo, Cleveland, Baltimore, etc., have been closed for many years by the basing-point practice and any inquiry in those potential markets elicits another, i.e., Where do you live or where is the steel to be delivered? In the language of one of the foremost economists, it is "a figure out of the delivered thing which is a hybrid in every sense of the term. It is not a price for steel. It is not a price for steel plus freight, but it is a price for steel plus a calculation" (Prof. William Z. Ripley, Harvard University, transcript of record in F. T. C. Docket 760, p. 18315.)

⁴¹ Prof. William Z. Ripley, Harvard University, transcript of record in F. T. C. Docket 760, p. 18249.

⁴² See statement of Judge Elbert H. Gary, formerly chairman, United States Steel Corporation, exhibit 51.

⁴³ See statements of Walter S. Tower, executive secretary, American Iron and Steel Institute, before various Government bodies, exhibit 51.

⁴⁴ "The tonnage steel industry represents a problem in monopoly and monopolistic competition—not merely a so-called 'trust' to be scattered by the courts or the Federal Trade Commission but an economic structure inherently monopolistic." (A résumé of "The Economics of the Iron and Steel Industry," by Dr. Ralph J. Watkins, Director of the Bureau of Business Research, University of Pittsburgh, February 1937.)

See also *An Analysis of the Basing Point System of Delivered Prices* by Walter B. Wooden and Hugh E. White of the staff of the Federal Trade Commission, hearings before the Temporary National Economic Committee, Part 27, exhibit No. 2242.

vantage to him" (exhibit 51). That is the negation of price competition.⁴⁵ Such a result necessarily involves the substitution for the impersonal processes of competition an arbitrary decision by one person or a limited few having the power to make them, as to what prices shall be charged and what portion of the total burden shall be imposed upon different localities and the many different industries using steel as capital goods, which in its simplest terms means industrial dictatorship.^{45a} The extent and importance of these decisions is well illustrated in the recent testimony of President Grace, of the Bethlehem company, before the T. N. E. C., in which he makes reference to the overnight reduction of \$6 per net ton in the price of sheets at Baltimore (exhibit 52). It is illustrated further in the high prices which were maintained for many years in the Central West, despite the much lower production costs of certain forms of steel in that territory, which, if permitted to operate, would have forced much lower prices at Pittsburgh and all the territory east thereof.⁴⁶ It is illustrated by the overnight effects of the partial compliance with the Federal Trade Commission's order in the *Pittsburgh Plus* case upon the destination prices of wire and wire nails in the territory west of Pittsburgh (exhibits 56 and 57). It is illustrated by the fact that (with one minor exception) no change in price occurred as a result of the Commission's order in the territory east of Pittsburgh; that as to those steel products in the form of consumer goods including tin-plate and tubular products, the Pittsburgh plus practice still prevails in that region. It was the injudicious exercise of that arbitrary power, together with the enormous increases in freight rates which occurred during 1918 and 1920 which precipitated the so-called *Pittsburgh Plus* case, F. T. C. Docket 760. That controversy was originally a friendly argument between the buyers and sellers of steel. It was in no sense an altruistic movement inaugurated by philanthropists in behalf of the forgotten consumer. It was an effort on the part of 800 midwestern fabricators of steel to secure relatively cheaper steel, relative to Pittsburgh; an effort to put an end to the price discrimination which was then being practiced to their detriment through a system with which they were in sympathy to a limited extent, but which never contemplated an increase in the freight rates, which in effect expanded the continental United States to twice its former size, under which Pittsburgh plus developed into an intolerable burden. Their selfish interests required an abandonment of the very system which the Bethlehem mergers were designed, among other things, to accomplish, the perpetuation of Pittsburgh plus in the East. The modification of that system by the partial substitution of the multiple basing point system, a system which the industry agrees is identical in principle, has the sole merit of effecting a wider distribution of the total burden of non-competitive prices.

For the reasons indicated herein the legal status of the mergers accomplished by Bethlehem Steel Corporation remains in doubt. Likewise, the legality of the system of merchandising which they were designed to perpetuate, a system which both Bethlehem and United

⁴⁵ The absurdity of that proposition as a competitive set-up appears when one contemplates the world as a common "market" instead of the continental United States, and the level of price which it would necessarily involve.

^{45a} See Exhibits Nos. 1385, 1386, Hearings Part 19.

⁴⁶ Hearings before the Temporary National Economic Committee, pt. 27, exhibits Nos. 2238, 2239; see also pt. 27, exhibit No. 2242, by Walter B. Wooden and Hugh E. White, of the staff of the Federal Trade Commission.

States Steel Corporation vigorously defend as a system of fair competition in that it enables every producer to "compete" with every producer, everywhere, remains for final judicial determination.

Must it be assumed that the extent of the power shown to have been secured and exercised through these mergers has been obtained by legal means?

Congress was moved to pass the Anti-Trust Act by two main considerations: (1) The desire to preserve the competitive system of industry; (2) the conviction that that system was threatened by the undue concentration of commercial power resulting chiefly from the unrestricted exercise of the right of combination.⁴⁷

In the absence of a purpose to monopolize or the compulsion that results from control or agreement, the individual certainly may exercise great freedom, but concerted action through combination presents a wholly different problem and is forbidden when the necessary tendency is to destroy the kind of competition to which the public has long looked for protection.⁴⁸

The only alternative than evasion is epitomized by two of the most eminent economists of our time:

Without competition the Government must control prices of products and possibly wages and prices of raw materials. This is an alarming program; and yet the state cannot leave its citizens in the power of the "octopus" of popular rhetoric. Nothing but competitive power of some kind can relieve the state of the duty of entering the market roughshod and forcibly dictating values of many kinds. Competition can save us from that difficult and perilous necessity.⁴⁹

In the consideration of these matters, two questions present themselves: (1) Is there reasonable expectation that the law may be so interpreted or amended as to reach the situation described herein, or (2) must we admit that our economic system does not work because we live in a world of pretense and that we cannot solve our problems because we refuse to diagnose them realistically?

EXHIBIT 1.

JULY 21, 1922.

THE OPINION OF THE ATTORNEY GENERAL

To the President of the Senate:

This communication is in response to a resolution passed by the Senate on May 8, 1922, a copy of which was duly transmitted to me. Without stopping to quote it in full, the resolution starts out with recitals that the public press has announced a proposed merger of seven steel companies, to be followed later by the inclusion therein of the Bethlehem Steel Corporation; that if such a merger takes place the corporation thereby formed will control the steel production of the country outside of that part in the hands of the United Steel Corporation, thereby placing monopolistic control of the country's entire steel production in the hands of two gigantic corporations. These recitals are then followed by requests to the Attorney General and the Federal Trade Commission to inform the Senate what steps they have taken to ascertain the purpose and effects of such a merger; the results of any investigation they may have made; what action they have instituted to protect the public interests; and that the Attorney General inform the Senate whether he thinks it advisable to proceed under the Sherman Act and the Clayton Act to prevent the impending combination.

⁴⁷ *United States v. U. S. Steel Corporation*, 251 U. S. 417.

⁴⁸ Unanimous opinion of U. S. Supreme Court, *U. S. v. American Linseed Oil Company, et al.*, 262 U. S. 371, 390.

⁴⁹ J. B. and J. M. Clark, *The Control of Trusts*, the Macmillan Co., New York, 1914, p. 122.

"Prof. John Bates Clark is perhaps the most distinguished of the American economists who may be regarded as the legitimate offspring of the classical line. He is certainly the American theorist who, during the past generation, has made the most original and impressive contribution to abstract economic theory. Of international reputation, he has been classed by the late Prof. Alfred Marshall as among the 3 or 4 great theoretical writers of the past generation. And many economists have concurred in Prof. E. R. A. Seligman's judgment, that his writings have earned for him the reputation of being one of the 5 or 6 great Anglo-Saxon theorists of the nineteenth century, putting him on a level with Ricardo, Sr., John Stuart Mill, Jevons, and Marshall" ("John Bates Clark: Earlier and Later Phases of His Work" by Paul T. Homan, Cornell University. *Quarterly Journal of Economics*, November 1927, p. 39).

At the outset I think it proper to call attention to the fact that my predecessors have consistently adhered to the doctrine that the duties of the Attorney General are prescribed by statute; that he is a member of the executive branch and as such is under the guidance and supervision of the President; that for the legislative branch to direct his conduct is a measurable interference with the executive branch; and that he is under no duty to obey the mandates of one branch of the Government when not sanctioned by positive law. The opinions embodying these declarations are copied in the margin. A compliance with this resolution in all of its details demands a departure on my part from what has heretofore been regarded as settled law. I do not intend, however, to allow these rulings to stand in the way of making a full and comprehensive report; but it must not be inferred that by so doing I manifest any intention to challenge the correctness of these rulings or to assail in the slightest degree the reasoning on which they are founded.

Two separate and independent mergers, unrelated to each other in any way, are in process of formation. One is between the Bethlehem Steel Corporation, owning plants in Pennsylvania and Maryland; and the Lackawanna Steel Co., whose plant is at Buffalo. The other is between the Midvale Steel & Ordnance Co., owning plants in Pennsylvania and in Delaware; the Republic Iron & Steel Co., owning plants in Ohio, furnaces in Pennsylvania and in Alabama, and certain plants at East Chicago and Muncie, Ind., and at Moline, Ill.; and the Inland Steel Co., owning plants close to Chicago.

It will be conducive to a clearer understanding of the situation if I take these mergers up separately. In order to furnish the information which I called for it was necessary for these companies to set at work for many days a large clerical force to go through hundreds of thousands of invoices covering each individual sale for the years 1919, 1920, and 1921, and to tabulate the results. The figures for all these years are before me, but to set them all forth would require an inordinately long report. I shall therefore confine myself to the figures for 1920, which I think can be considered a fairly normal year. As every one knows, there was a heavy slump in the steel business in 1921, and the figures for that year can hardly be regarded as typical.

BETHLEHEM AND LACKAWANNA MERGER

To get an accurate idea of the scope of the activities of the Bethlehem and the Lackawanna, it will be well to present at the outset a list of the articles made by one company which are not made by the other. As to such articles there obviously can be no competition between the two. This process of elimination will eventually lead us to the products which are common to both.

The activities of the Bethlehem may properly be divided into main divisions, one representing the production of steel products, the other the building of ships. Of the selling value of its products in 1920, 61.39 percent was derived from the former; 38.61 percent from the latter. Inasmuch as the Lackawanna does not engage in shipbuilding activities, it is apparent that no competition between the two in this line of business can possibly exist.

Coming now to the division representing the production of steel products, the Bethlehem produces for sale a large number of articles which the Lackawanna does not. These include low-phosphorous pig iron, spiegeleisen, ferromanganese, Mayari iron, girder rails for street-car service, guard rails, high-tee rails, rail braces, frogs, switches, crossings, special track work, switch stands, turntables, Bethlehem structural shapes, ship structural shapes, eye bars, cement-mill balls, hollow forgings, press and hammer forgings, fluid-compressed ingots, hardened-steel rolls, drop forgings, shafting, die blocks, iron, alloy, steel and other highly finished bars, cold drawn bars, spring steel, file steel, rough-turned bars, window-sash sections, curb bar, barrel-hoop sections, blue annealed sheets, black and galvanized sheets, tin and black plate, steel castings, manganese-steel castings, cast iron and steel rolls, iron castings, tunnel segments, iron moulds, brass castings, puddle iron, staybolt iron, chain iron, electric tool steel, crucible tool steel, toe calk steel, armor plate, guns, gun forgings, gun mounts, carriage caissons and limbers, range finders, gun sights, air-flask forgings, shell forgings, completed ammunition, cartridge cases, fuses, turret mechanisms, armor-plate vaults, safe-deposit boxes, large gas engines, large oil engines, heavy machinery, large pumps, machine tools, hydraulic presses, steel automobile wheels, cutting and punching tools, special bolts and nuts of all kinds, rivets, washers, tie rods, liner wedges, car and bridge knuckle and cotter pins, clevises, pole-line material, turnbuckles, marine engines, Curtiss turbines, Diesel engines, Scotch and Yarrow boilers, condensers, marine auxiliaries, Weir pumps, Dahl fuel-oil burners, valves and fittings, paraffine-wax

machinery, mining machinery, steel and wood, sleeping, private, passenger, baggage, and mail cars.

On the other hand, the Lackawanna produces for sale a number of articles which the Bethlehem does not. These include base plates; piling; plate piling; merchant steel bars, including rounds, squares, and flats; agricultural shapes, auto sections.

The products produced by both companies for sale may with substantial accuracy be designated as follows: Coke byproducts, pig iron, blooms, billets, slabs and sheet bars, standard tee and light rails, rail joints, splice bars and tie plates, structural shapes, plates, universal and sheared, concrete bars, steel bridges, viaducts, buildings and pier caissons, railroad spikes, track bolts and nuts.

Taking the figures for 1920 as a basis, it appears that of the income received by the Bethlehem from its steel-products division, 67.60 percent was derived from products which the Lackawanna does not produce. In the case of the Lackawanna, 31.98 percent was derived from products which the Bethlehem does not produce. Or to state the matter in a different way, the Bethlehem's income received from products common to both companies (including both the domestic and foreign trade) was 32.40 percent; the Lackawanna's, 68.02 percent.

In this connection it should be borne in mind that both companies engage in export as well as domestic trade. Inasmuch as the antitrust laws differentiate between the two, it will be well to produce the figures showing the percentages of each. Of the total income, both domestic and export, received by the Bethlehem from its steel-products division in 1920 on all articles, common to both companies, substantially 83 percent was received from the domestic trade, and 17 percent from the export. In the case of the Lackawanna, substantially 84 percent was received from the domestic and 16 percent from the export.

The following table shows the products in the domestic trade common to both companies in 1920, and the percentage of income represented by each such product to the total income on both common and noncommon products, the Bethlehem's income from its shipbuilding activities being wholly disregarded in arriving at the percentages:

Articles	Bethlehem	Lackawanna	Articles	Bethlehem	Lackawanna
	<i>Percent</i>	<i>Percent</i>		<i>Percent</i>	<i>Percent</i>
Coke and byproducts.....	3.48	2.12	Rail accessories:		
Pig iron, basic.....	2.12	2.24	Standard splice bars		
Blooms, billets, and slabs.	2.06	1.08	and continuous and		
Sheet bars.....	2.15	7.31	100-percent joints...	1.96	2.49
Rails:			Bonzano joints.....	.19	.06
Standard.....	5.02	30.01	Tie plates, standard...	.19	.12
Light tee.....	.06	1.53	Railroad spikes.....	.67	.95
Structural shapes, stand-			Track bolts.....	.66	.32
ard.....	8.82	10.21			
Plates, 78½ inches and			Total, common	29.48	66.27
under.....	2.23	7.82	products.....		
Concrete bars, twisted....	.07	.01	Total, all others.....	70.52	33.73
			Total of both.....	100.00	100.00

Coming now to the products common to both companies, I shall take up each separately and present figures from which a fair idea of the extent of competition between the two can be obtained.

Coke and byproducts.—The products derived in the making of coke and tar, ammonia sulphate, naphtha, benzol, toluol, motor fuel, and gas. As might be inferred, the sale of coke and gas is not a normal incident of the steel business. The Lackawanna sold neither in 1920. All that was produced was needed for its own business. The tar is sold outright at the plants to purchasers in that locality. Of the various products, ammonia sulphate, motor fuel, and benzol are, in the order named, the most important from the standpoint of revenue. The companies themselves do not engage in the sale of these products. They are delivered to an independent company, which disposes of them on a commission basis wherever a market can be found. Inasmuch as all concerns engaged in the manufacture of gas produce similar products, to say nothing of like products placed on the market by the United States Steel Corporation through an independent selling agency, it will be seen how really unimportant are these items with respect to the matter in hand.

Pig iron—basic.—The pig iron produced by both of these companies is primarily intended for their own use. The production of pig iron is, of course, the

initial step in the manufacture of steel products. As both companies need pig iron in their operations, it is obvious that the sale of this article is but a mere incident. It not infrequently happens, however, that if a surplus is on hand at any particular time the companies are willing to dispose of the same; but this is usually done as a matter of accommodation to a steel manufacturer who happens to be in need of the particular product. In the year in question the entire production of all kinds of pig iron was 36,925,987 tons. Of this amount the Bethlehem produced 4.69 percent; the Lackawanna, 2.87 percent. The Bethlehem sold in the domestic trade 107,145 tons; the Lackawanna, 33,997 tons. At the present time the latter company is selling none. The only States in the New England district (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) where both companies happened to ship in 1920 were Connecticut and Massachusetts; the Bethlehem shipping that year to Connecticut 6,865 tons and to Massachusetts 374; the Lackawanna, 8,315 tons to Massachusetts and 2,337 to Connecticut. In the Eastern district (New York, Delaware, District of Columbia, Maryland, New Jersey, Ohio, Pennsylvania, and West Virginia), the Bethlehem sold in that year 99,540 tons; the Lackawanna, 22,327. Of the amount thus shipped by the Bethlehem, about 57 percent went to Pennsylvania; and of the amount thus shipped by the Lackawanna, about 65 percent went to New York. The tonnage shipped by the Bethlehem to New York was slightly under 1,200; while the Lackawanna's tonnage was slightly over 14,400. The Bethlehem shipped a large tonnage to Delaware; the Lackawanna shipped none. The Bethlehem shipped close to 10,000 tons to New Jersey; the Lackawanna shipped slightly over 4,000 tons. The Lackawanna shipped a comparatively small tonnage to Ohio; the Bethlehem none at all. The Bethlehem shipped none at all to the Western district (Colorado, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, North Dakota, South Dakota, Utah, Wisconsin, and Wyoming); the Lackawanna, only 440 tons. The Bethlehem shipped none at all to the Southern district (Alabama, Arizona, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia); the Lackawanna but 69 tons. The Bethlehem shipped to the Pacific Coast district (Alaska, California, Oregon, and Washington) only 366 tons; the Lackawanna, 179.

While statistics are available showing the entire production of pig iron in the whole of the United States, there are none showing the total sales in each particular State. But when we stop to consider that of the total pig iron produced in the United States in 1920, the Bethlehem and the Lackawanna together produced but 7.56 percent; it becomes at once apparent that any question of competition with respect to pig iron is a matter of small concern.

Blooms, billets, and slabs.—These are semifinished rolled-steel products, being forms through which the steel ingot passes before its conversion into other steel products. Blooms, billets, and slabs are similar products, differing from each other merely in point of size. As might be implied, they are consumed for the most part by the company which produces them, although a small tonnage finds its way into the hands of some particular manufacturer of steel products. The total production of steel ingots in the United States in 1920 was 40,881,392 tons. Assuming a loss in the conversion of these ingots into blooms, billets, and slabs of 15 percent, which is ordinarily the case, the production of the latter was therefore close to 35,000,000 tons. The total tonnage sold by the Bethlehem in the United States in 1920 was 51,631; by the Lackawanna, 9,408. In other words, their combined tonnage sold in the United States in that year was 61,039, the Bethlehem contributing 84.59 percent and the Lackawanna 15.41 percent.

Sheet bars.—Statistics are not available showing the entire production in the United States. Like the items last discussed, sheet bars are a semifinished rolled-steel product and constitute the material out of which sheets are made. Obviously, therefore, the purchaser of this product is usually some particular manufacturer of steel products. In 1920 the Bethlehem sold in the domestic grade 49,870 tons; the Lackawanna, 70,473 tons. In other words, out of a combined tonnage that year of 120,343 the Bethlehem contributed 41.44 percent; the Lackawanna, 58.56 percent. There were only six States to which sheet bars were shipped by either company in that year—New York, Delaware, Maryland, Ohio, Pennsylvania, and West Virginia. Of the 70,473 tons sold by the Lackawanna that year 66,248 tons, or 94 percent of its entire tonnage, were sold in New York, while the Bethlehem shipped none at all to that State. Of the 49,870 tons sold by the Bethlehem that year, 26,803 tons were sold in Maryland and 17,168 in Pennsylvania, representing 88.17 percent of its entire tonnage. On

the other hand, the Lackawanna sold none at all in Maryland and only 1,850 tons in Pennsylvania. Of the entire business transacted by these companies, blooms, billets, and slabs constitute a very small part.

Sheet plates—78½ inches.—No mention will be made of plates exceeding the size just mentioned, inasmuch as one of these companies does not produce them. In 1920 the sales made by these companies were distributed as follows: in the New England district, the Bethlehem 1,564 tons, the Lackawanna 2,720; in the Eastern district, the Bethlehem 37,626 tons; the Lackawanna 43,375; in the Western district, the Bethlehem 2,408 tons, the Lackawanna 9,612; in the Southern district, the Bethlehem 2,500; the Lackawanna 368; in the Pacific Coast district, the Bethlehem 1,946; the Lackawanna 5,694. In short, out of a combined tonnage of 107,813, the Bethlehem contributed 42.71 percent, the Lackawanna 57.29 percent. It will be observed that 81.72 percent of the total tonnage sold by the Bethlehem in 1920 found its way into the Eastern district as against 70.20 percent on the part of the Lackawanna. Of the portion produced by both companies which found its way into the area described as Greater New York, the Bethlehem shipped 72 percent, the Lackawanna 28 percent. Of the tonnage produced by both which found its way into the rest of New York State, the Bethlehem shipped 8.62 percent; the Lackawanna 91.38 percent.

Concrete bars—twisted.—In the entire United States the Bethlehem sold but 1,192 tons; the Lackawanna, only 129 tons.

Structural shapes.—In point of tonnage and revenue this constitutes a very important item. There are two kinds known to the trade, the standard and the Bethlehem. The latter derives its name from the fact that it is made alone by the Bethlehem company under letters patent. The manufacture of standard shapes is open to anyone. The total tonnage of structural shapes produced in the United States in 1920, both standard and Bethlehem, aggregated 3,306,748 tons. The Bethlehem shipped for the domestic trade 204,837 tons of standard; the Lackawanna, 88,877. In addition the Bethlehem shipped for the domestic trade 185,347 tons of the Bethlehem shapes. In other words, the percentage of the portion shipped by both companies in the domestic trade was 14.49 percent of the total production in the United States. Of the total tonnage of both shapes shipped by the Bethlehem close to one-third was marketed in Pennsylvania alone, while slightly less than one-tenth was marketed in New York. The Lackawanna, on the other hand, shipped about one-ninth of its product to Pennsylvania and about one-quarter to New York. The Bethlehem shipped about one-thirteenth of its product to Ohio; the Lackawanna, about one-tenth. The Bethlehem shipped about one-sixth of its product to New Jersey; the Lackawanna scarcely any. In passing it may be observed that the Bethlehem specializes in the production of structural shapes.

Rails—standard.—The Lackawanna's great specialty is the production of steel rails. Of the entire tonnage produced in the United States in 1920 (2,604,116), it contributed 15.18 percent; the Bethlehem, 6.78 percent. If these companies combine they will, if the ratio just mentioned continues, control substantially 22 percent of the country's entire production. About seven-eighths of this production is sold in the United States, the remaining one-eighth being sold in the foreign trade. Of the entire amount sold by these two companies in the New England district, the Bethlehem contributed 16.37 percent; the Lackawanna 83.63 percent. In the Eastern district, the Bethlehem contributed 38.69 percent; the Lackawanna 61.31 percent. In the Western district, the Bethlehem contributed 4.73 percent; the Lackawanna, 95.27 percent. In the Southern district the Bethlehem contributed 67.08 percent; the Lackawanna, 32.92 percent. Neither company shipped any into the Pacific Coast district.

My investigation of this matter, conducted by representatives in the field, convinces me that in the New England district these two companies enjoy a very substantial amount of the trade in rails. As already indicated, no figures are available showing what other manufacturers ship there. But representatives of practically every railroad in this district were interviewed, all of whom corroborate the statement just made. This in a great measure, if not entirely, is attributable to the fact that the Lackawanna's plant at Buffalo and the Bethlehem's plant in eastern Pennsylvania lie closest to that field.

With respect to rails a marked uniformity, of long duration, exists in quoting prices. All manufacturers of steel rails throughout the country, no matter where the plants may be located, quote substantially the same prices; and the prices thus quoted are uniformly f. o. b. at the mills. Naturally, therefore, it is the railroad's advantage to place its orders with those mills reached by its own rails; or if no mills are located on its line then with those mills off its line that afford

the shortest haul. In the former case it incurs no transportation charge; in the latter, such charges are reduced to a minimum. None of the railroad representatives in the New England district (where alone the Bethlehem and Lackawanna enjoy almost an exclusive field in the rail line), voiced any apprehension that a merger of these companies would result in an enhancement of prices or a monopolistic control.

Rails—light tees.—These constitute a comparatively unimportant item. In 1920 the Bethlehem produced in the domestic trade 2,191 tons; the Lackawanna, 14,416 tons. Only 14 tons were sold by both companies in the New England district. Of the 2,191 tons shipped by the Bethlehem 1,550 were sold in Pennsylvania and 484 in West Virginia, leaving only 157 tons for distribution elsewhere. The Lackawanna, on the other hand, disposed in Pennsylvania, New York, and Ohio of nearly all it produced.

Rail accessories.—(a) Standard splice bars: In the New England district the Bethlehem sold 2,701 tons; the Lackawanna, 711 tons. In the Eastern district the Bethlehem sold 8,389 tons, the Lackawanna 10,975 tons. Of the latter tonnage the Lackawanna marketed over two-thirds in the State of New York. In the Western district the Bethlehem marketed 1,554 tons, the Lackawanna 3,066 tons. In the Southern district the Bethlehem marketed 2,405 tons, the Lackawanna 95 tons. In the Pacific Coast district the Bethlehem marketed 29 tons, the Lackawanna less than a ton.

(b) Bonzano joints: This is a patented product. The Bethlehem produced 3,825 tons, the Lackawanna 510 tons; both companies selling to a single purchaser.

(c) Continuous and 100 percent joints: This also is a patented product sold by both companies to a single purchaser, the Bethlehem selling 21,643 tons, the Lackawanna, 4,320.

(d) Tie plates—standard: The Bethlehem sold direct to customers 3,633 tons; the Lackawanna, 1,370 tons, all of which went to a single concern.

These rail accessories constituted but 2.34 percent of the Bethlehem's domestic business in its steel-works division; and but 2.67 percent of the Lackawanna's domestic business.

Railroad spikes and track bolts.—In the New England district the Bethlehem sold 833 tons, the Lackawanna 544 tons. In the Eastern district the Bethlehem sold 5,602 tons, the Lackawanna 4,626 tons. In the Western district the ratio between the two was about the same, although the volume of sales was considerably less. In the Southern district the Bethlehem sold 4,570 tons, the Lackawanna only 591. The sales in the Pacific Coast district were so small as to deserve no mention.

Bridges, viaducts, caissons, and buildings.—No figures are available showing the entire amount of business done throughout the country in this line of activity, and it was not until the beginning of this year that the Lackawanna entered upon the construction of viaducts and bridges. It has had nothing to do with caisson construction for upward of three years, although just now it is engaged in carrying out a contract for the tunneling of the Hudson River. With respect to viaducts and bridges the Lackawanna is not equipped to carry on work of the larger kind, its main work being confined to railroad bridges and the like. On the other hand, the Bethlehem's equipment is such as to enable it to construct viaducts and bridges of whatever size. It makes no active effort, however, to acquire the smaller business, such as the Lackawanna engages in, for on the whole it finds it advantageous to keep away as much as possible from work of the smaller kind.

The principal concerns engaged in the fabrication of structural material on a large scale are the following, although there is a large number of smaller fabricators not included in this list whose combined capacity is very substantial:

American Bridge Co., a subsidiary of U. S. Steel Corporation; Belmont Iron Works; Berlin Construction Co.; Bethlehem Fabricators, Inc.; Boston Bridge Works; Buffalo Structural Steel Co.; Eastern Bridge & Structural Co.; Erie Steel Construction Co.; Fort Pitt Bridge Co.; Hay Foundry & Iron Works; Hedden Iron Construction Co.; Jones & Laughlin Steel Co.; George A. Jast Co.; Kansas City Structural Co.; Kellogg Structural Steel Co.; King Bridge Co.; Lehigh Structural Steel Co.; Levgar Structural Co.; McClintic-Marshall Co.; Minneapolis Steel & Machinery Co.; Mt. Vernon Bridge Co.; National Bridge Works; New England Structural Co.; Paterson Bridge Co.; Penn Bridge Co.; Phoenix Iron Co.; Pittsburgh Des Moines Co.; Shoemaker Satterthwaite Co.; Virginia Bridge & Iron Co.; Witherow Steel Co.

The percentage of the principal products produced by other manufacturers and the competition that will exist if this merger goes through

Pig iron.—The total production in the United States in 1920 was 36,925,987 tons, of which the Bethlehem and the Lackawanna together contributed 7.56 percent. The amount produced by others was 34,137,290 tons, or 92.44 percent.

Structural shapes.—The entire production in the United States for 1920 was 3,306,748 tons. Of this tonnage, Bethlehem and Lackawanna together contributed 21.43 percent. Or, to state the matter in a different way, 2,757,929 tons, or 78.57 percent of the whole, were produced by other concerns. The Iron and Steel Works Directory of the United States and Canada for 1920 gives, on page 470, a list of 52 different concerns engaged in the manufacture of structural shapes in the United States.

Plates.—4,755,133 tons were produced in the United States in 1920; the Bethlehem and the Lackawanna together contributed 4.73 percent. This means that 4,529,986 tons, representing 95.27 percent of the total, were produced by other concerns. See pp. 472-3 of the Directory just mentioned for a list of 58 concerns in the United States manufacturing plates in 1920.

Rails.—The total production in the United States in 1920 amounted to 2,604,116 tons, of which Bethlehem and Lackawanna together contributed 21.96 percent. Or, to state the matter in a different way, 2,032,231 tons, representing 78.04 percent of the total, were produced by others. See p. 469 of the Directory for a list of the various concerns in the United States engaged in the manufacture of rails.

Steel ingots.—Inasmuch as all steel products are made from this article, it will be well to give figures showing the ingot capacity of the entire country and the percentage represented by Bethlehem and Lackawanna, with figures designed to contrast their capacity with that of the United States Steel Corporation and other producers. The country's total rated annual ingot capacity is 50,440,000 tons. Of this amount Bethlehem and Lackawanna's combined capacity is 9.7 percent; that of the United States Steel Corporation is 45 percent; that of all others is 45.3 percent. In other words, the rated ingot capacity of the United States Steel Corporation is about five times that of the Bethlehem and Lackawanna combined.

Will a merger of these companies violate the act of July 2, 1890, commonly known as the antitrust act?

In my opinion it will not. I am unable to find any ground for asserting that the acquisition of the Lackawanna by the Bethlehem will offend the Act of July 2, 1890, commonly known as the Sherman or antitrust act. The numerous decisions of the Supreme Court, ranging over a period of 30 years, leave little room for doubt as to the true scope and meaning of this important statute. Every combination formed for the avowed purpose of restraining interstate trade or of acquiring a monopoly therein falls, of course, within its condemnation. As pointed out in an early decision of the Supreme Court,¹ it is not every contract or combination in restraint of trade that is prohibited by this act; for if that were the case, scarcely any contract would fall beyond its reach. It obviously applies, however, to every contract or combination in unreasonable restraint of trade; and manifestly the evils that may be inflicted upon the public, such as the enhancement of prices, are of paramount concern.

I am unable, however, to find in the exhaustive investigation I have made any reasonable warrant for asserting that the public will suffer if this consolidation is consummated. I am persuaded that the motive which prompts the Bethlehem to acquire the Lackawanna plant is the sole desire to secure greater efficiency and economy in the production, handling, and distribution of steel products, and that the thought of acquiring a monopoly or of enhancing prices was never present. The whole transaction from beginning to end impresses me as being thoroughly clean, honest, and straightforward. I need not stop to point out that in *United States v. U. S. Steel Corporation*, 251 U. S. 417, the Supreme Court refused to declare illegal a combination of much greater magnitude. In that case the court apparently adopted the findings of two of the four judges of the lower court that the combination there assailed was formed for the avowed purpose of acquiring a monopoly; but because monopoly was found to be impossible of attainment and

¹ *Hopkins v. United States*, 171 U. S. 578, 600. "An act . . . must have a reasonable construction or else there would scarcely be an agreement or contract among businessmen that could not be said to have indirectly or remotely some bearing upon interstate commerce, and possibly to restrain it."

all attempts with other manufacturers to control prices had been abandoned in good faith before suit was brought, the court refused to order the combination dissolved. The merger now under consideration will be neither an actual monopoly nor even an attempt to monopolize; and of course the decision just referred to is controlling.

Will a merger of these companies violate the Act of October 15, 1914, commonly known as the Clayton Act?

Here, also, I am constrained to the conclusion that it will not. But different considerations in part apply. That act (Sec. 7) makes it illegal for one corporation engaged in interstate commerce to acquire the stock or other share capital of another corporation engaged also in such commerce where the effect of such acquisition may be substantially to lessen competition between them or to restrain commerce in any section or community, or tend to create a monopoly of any line of commerce. It is obvious that the acquisition of the stock of one company by another is not prohibited where all that takes place is a mere lessening of competition. The act denounces the acquisition only where the effect may be substantially to lessen competition between the companies. I have set forth with considerable detail the extent of the competition existing between the two companies mentioned. In my opinion the facts are not such as to bring the proposed merger within the prohibition of the Clayton Act.

This conclusion renders it unnecessary for me to consider another question, the solution of which is attended with no little difficulty, and that is whether the proposed merger would fall within this act if its effect were to substantially lessen competition. As we have just seen, that act does not in express terms prohibit the acquisition of physical assets. What it prohibits is the acquisition of "the stock or other share capital." What the Bethlehem company in this instance proposes to do is to acquire, not the capital stock of the Lackawanna, but an outright conveyance of its physical assets. The Federal Trade Commission, by a ruling made in 1916, announced that in its opinion the act did not prohibit the acquisition of the physical assets of one corporation by another. As that body, no less than myself, is charged with the duty of enforcing certain provisions of this act, its administrative construction of the section in question is entitled, under a long and well-recognized line of authorities, to great weight. In this instance however, the plan of purchase contemplates that the Lackawanna shall convey its property to the Bethlehem in return for shares of stock of the latter company, to be followed by an early winding up and dissolution of the Lackawanna and the distribution of these shares among the Lackawanna stockholders. I need not, however, stop to consider whether, under other circumstances, this would be a violation of the act, for the conclusion I have just announced makes it unnecessary to do so.

Will a merger of these companies violate the Act of April 10, 1918, commonly known as the Webb Act?

These companies are members of an association formed pursuant to the authority granted by this act to handle export trade. It is obvious from what I have already said that this act will in no wise be violated if this merger goes through.

Will a merger of these companies violate the act of Sept. 26, 1914, commonly known as the Federal Trade Commission act?

The Senate's resolution is broad enough to call for an expression of my views upon this point; but for obvious reasons I must decline to express any. The Federal Trade Commission is alone vested with the power of enforcing that act, and as appears from the Congressional Record, 67th Congress, 2d session, p. 8872 et seq., that body has preferred a formal complaint against these companies, charging that the proposed merger is an unfair method of competition within the meaning of sec. 5. The Senate will no doubt be quick to perceive the impropriety of my expressing any opinion upon this matter.

• MIDVALF-REPUBLIC-INLAND MERGER

I shall begin by taking up the products common to all three of these companies and present sales figures showing the geographical distribution of the products and the percentage which the production of these companies bears to the entire production in the United States. As in the case of the other merger, I shall deal along with the year 1920.

Coke and byproducts.—The remarks under this heading in dealing with the other merger are likewise applicable here, and accordingly this item does not require separate treatment.

Pig iron.—What has been said under this heading with respect to the other merger likewise applies here, and repetition is accordingly unnecessary. The three companies combined produced only a small percent of the entire production in the United States, and are really not in competition with respect to this item, the Republic alone engaging in its sale and then only with respect to that made in Alabama.

Blooms, billets, and slabs.—In the New England district (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) none of the three companies in 1920 sold any blooms. Midvale sold 33 tons of billets and 3 tons of slabs. The Republic sold 1,055 tons of billets, and no slabs. Inland sold neither blooms, slabs, nor billets. In the Eastern district (New York, Delaware, District of Columbia, Maryland, New Jersey, Ohio, Pennsylvania, and West Virginia) the Republic sold no blooms. The Midvale sold 10,582 tons, over one-half of which went to New York. The Inland sold 36,451 tons, all but 90 tons going to Ohio and Pennsylvania. As a rule the Inland's shipments into this territory are exceedingly small, the heavier tonnage for 1920 being accounted for by the fact that an unusual shortage occurred in this district in that year, and the abnormal conditions which existed at the time were such as to induce Inland to ship a portion of its product to that territory.

With respect to billets the Midvale sold 953 tons; the Republic 6,977 tons; the Inland 12,747, all but 154 tons going to Ohio. With respect to slabs Midvale sold 3,015 tons; Republic 1,845 tons; Inland 15,021 tons, all of which went to a single concern in northern Ohio.

In the Western district (Colorado, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, North Dakota, South Dakota, Utah, Wisconsin, and Wyoming) the Midvale sold only 4 tons of blooms, 56 tons of slabs and 2,733 tons of billets; the Republic none at all; the Inland 217 tons of blooms and 33,819 tons of billets, of which over 30,000 were sold in Illinois. In the Southern and Pacific Coast districts the sales made by each are so insignificant as to deserve no mention. When we stop to consider that approximately 35,000,000 tons were produced in the United States, we realize how inconsequential this item really is. As stated elsewhere, blooms, billets, and slabs are usually used by the steel manufacturer that produces them, the surplus only finding its way to the market and then usually to accommodate some particular manufacturer who happens to be running short.

Sheet bars.—None of the companies sold this product in the New England district. In the Eastern district, Midvale sold 15,792 tons, over one-half of which was sold in Pennsylvania; Republic, 173,533 tons, of which all but 18,759 tons were sold in Ohio; Inland sold 35,300 tons, 22,302 tons going to Ohio and the balance to Pennsylvania. In the Western district, Midvale sold none at all; Republic, 165 tons; Inland, 2,928 tons; all but 39 tons being sold in Indiana, where the Republic sold none at all. None of the companies sold in the Southern or Pacific Coast States. It is to be borne in mind that sheet bars are a semi-finished product, the purchaser being the steel manufacturer and not the ultimate consumer. As shown at page 469 of the Iron and Steel Works Directory of the United States and Canada for 1920, there are 37 concerns scattered throughout the United States engaged in the production of this product.

Plates.—The entire production in the United States for 1920 was 4,755,133 tons. Midvale contributed 8.22 percent; Republic 0.75 percent; Inland 2.31 per cent. In the entire New England and Eastern districts Inland sold only 576 tons; Republic 27,956 tons, 16,215 tons of which were sold in Pennsylvania, 6,763 tons in Ohio, and 3,153 tons in Maryland. The rest of its sales were scattered through Delaware, New Jersey, New York, Rhode Island, and West Virginia. On the other hand, Midvale, whose sales aggregated 269,057 tons, reached every one of the States in these two districts, Pennsylvania, Ohio, New York, Maryland, New Jersey, Massachusetts, and Delaware being the heaviest purchasers in the order stated. In the Western States Midvale sold 26,054 tons; Inland 94,850 tons; while Republic sold but 67 tons. In Illinois and Indiana Inland's sales aggregated over 68,000 tons; Midvale's sales in these two States amounting to about 10,000 tons. In the Southern States, Midvale's sales amounted to 18,260; Republic's 1,137; Inland's, 844 tons. In the Pacific Coast States, Midvale's sales amounted to 6,004 tons; Inland's to 3,544 and Republic's to 26 tons.

After eliminating the plates made by these three companies in 1920, the remaining production in the United States amounted to 4,218,803 tons, or 88.72 per cent of the total. By referring to the Iron and Steel Works Directory of the

United States and Canada for 1920 it will be seen (pp. 472-473) that 62 companies are listed as manufacturers of plates, 58 of which are in the United States.

Sheets.—Midvale is not a manufacturer of this article and therefore can be disregarded. In the entire New England and Eastern districts Republic sold 32,204 tons; Inland only 1,279 tons, all but 214 tons of which went to Ohio, the remaining 214 finding its way either to New York or Pennsylvania. When we come to the Western district, we find the Republic sold 9,077 tons, whereas the Inland sold \$4,600 tons. Of the 9,077 tons sold by the Republic in this territory, over one-half found its way to Illinois, in which State the Inland sold 44,980 tons. In the Southern district the Republic sold 3,709 tons; the Inland 5,030 tons. In the Pacific Coast district the Republic sold 1,704 tons; the Inland 5,751 tons.

The total production of sheets in the United States in 1920 was 4,582,547 tons, Inland contributing 2.3 percent and Republic 1.09 percent. Or, to state the matter in a different way, 4,427,158 tons, representing 96.61 percent of the total production, were produced by other companies. On p. 474 of the directory mentioned under the preceding heading will be found a list of 66 companies, all engaged in the manufacture of plates. The American Sheet & Tin Plate Co. alone has 13 mills, located at various points in Ohio, Indiana, and Pennsylvania. (See pp. 21-24 of directory just mentioned.) There were 644 sheet mills in the United States on Jan. 1, 1922, the Republic and the Inland together owning 36 of this number.

Structural shapes.—The Republic does not manufacture this important item and therefore may be disregarded. In the entire New England and Eastern districts the Midvale sold 79,032 tons; the Inland 4,174 tons. The Midvale reached every State in this territory; the Inland only Connecticut, New York, Ohio, and Pennsylvania, nearly all of its product going to the two latter States. In the Western district, the Midvale sold 13,985 tons, the Inland 106,747 tons. In the Southern district, the Midvale sold 5,145 tons; the Inland 1,560 tons. In the Pacific Coast district, the Midvale sold 3,109 tons; the Inland 7,746 tons.

The entire production in 1920 in the United States was 3,306,748 tons, of which Midvale contributed 3.61 percent and the Inland 3.72 percent. It will be seen from the figures just given that the great bulk of Midvale's tonnage is marketed in the New England and Eastern territory, where Inland finds a market for about one-nineteenth of the tonnage marketed by Midvale. On the other hand, the great bulk of Inland's tonnage is marketed in the Western district, where Midvale markets about one-eighth of the tonnage marketed by the Inland.

After deducting the tonnage manufactured by these two companies in 1920 from the total tonnage throughout the United States, we have left 3,064,323 tons, or 92.67 percent of the total. By turning to the Iron and Steel Works Directory for 1920, p. 476, we find a list of 52 concerns engaged in the manufacture of structural shapes at different places in the United States.

Rails.—Until recently Midvale was the only one of these three companies to manufacture rails. In March 1922, Inland, however, began their manufacture and sale. It is apparent from the discussion of this item in dealing with the other merger that no competition between the two companies will exist with respect to rails, the plants of each company being close to 800 miles apart.

Merchant bars.—In point of tonnage this is the most important item in the steel industry. To obtain an accurate idea of the sales made by these three companies it will be well to divide merchant bars into three classes: (1) steel bars; (2) old rail bars; (3) iron bars. Iron bars may be disregarded, the Republic being the only one that makes them. Midvale may be disregarded so far as old rail bars are concerned, for it does not make them. And so far as the New England and Eastern districts are concerned Inland may be entirely disregarded with respect to steel and old rail bars, for it sold none of the latter and only 877 tons of the former.

Coming now to steel bars, in the New England and Eastern districts Midvale sold 132,087 tons; Republic 191,712 tons. In the Western district, sales of steel bars were: Midvale 30,597 tons; Republic, 44,842 tons; Inland, 73,922 tons. In the Southern district, Midvale, 7,945 tons; Republic, 4,922 tons; Inland, 1,009 tons. In the Pacific Coast district, Midvale, 1,526 tons; Republic 152 tons; Inland, 630 tons.

With respect to old rail bars (which Midvale does not produce) the Republic sold 1,219 tons in the New England and Eastern districts; the Inland none at all. In the Western district, the sales were: Republic, 34,366 tons; Inland, 35,868 tons; in the Southern district, Republic, 1,464 tons; Inland, 671 tons; in the Pacific Coast district, none at all.

In this connection the fact must not be overlooked that "merchant bars" is a generic term of wide application, embracing different kinds of bars which are used for an endless number of purposes. The bars produced by the Midvale are practically all made on slow-running hand mills. On the other hand, about 75 percent of the bars turned out by the Republic are made on continuous or semi-continuous mills. The larger part of those produced by the Midvale are of a high grade and of special grades and special sections; while those produced by the Republic and Inland are of a commoner sort—styled common merchant bars to distinguish them from the higher grade article. Because of the wide variety of uses, to which these bars are put, the demands of the trade must be satisfied by the production of these various types and grades. Unlike those produced by the Midvale, Inland, for example, makes no special sections. Its product, all of which is made from continuous mills, consists for the most part of rounds, squares and flats, and of what is termed concrete bars.

Still using 1920 figures as a basis, of the entire steel tonnage marketed by Midvale 14.45 per cent was represented by merchant bars; in the case of the Republic 34.37 per cent; and in the case of the Inland 16.83 per cent.

The total production of merchant bars (iron, steel, and old rail bars) in the United States in 1920 amounted to 7,268,313 tons. Midvale's contribution was 2.72 per cent; Republic's 4.77 per cent; Inland's 1.75 per cent; or 9.24 per cent for all three. There are 148 different concerns engaged in the production of these bars, 109 of which make steel bars. A complete list of these various manufacturers and the location of their plants will be found at pp. 478-82 of the 1920 directory above mentioned.

Other products made by these companies.—It must not, of course, be inferred that the products above enumerated are the only ones made by these companies. On the contrary, numerous other articles are manufactured, many of them on a large scale. For example, Republic is a large manufacturer of oil and gas pipe, which neither Midvale nor Inland produces. Again, Midvale is a large manufacturer of boiler tubes, rods, drawn wire, wire nails, steel cars, axles, and wheels, none of which is produced by the other two. But the above enumeration embraces substantially all of the products of any importance produced in common by these companies.

Will a merger of these companies violate the act of July 2, 1890, commonly known as the anti-trust act?

I see nothing in the proposed merger that offends this act. In my opinion there is not the slightest ground for supposing that it will result in any restraint of trade or monopolistic control. The plants of these companies are widely scattered, and my investigation leads to but one conclusion, and that is that the underlying purpose of this combination is not to acquire a monopoly or to restrain trade, but to enable the new company more effectually to compete with the United States Steel Corporation, which, because of the wide distribution of its various plants and their easy accessibility to the source of raw materials, is enabled to produce and sell its products much cheaper than other manufacturers. Instead, therefore, of being in restraint of trade, the new combination will be in furtherance of trade. Its formation has, I believe, been in a great measure prompted by the heavy losses which all of these companies sustained following the marked depression in the steel industry which began over a year ago. These losses, aggregating many millions of dollars, have naturally induced these companies to devise methods of cheapening the production, sale, and distribution of their products. By owning plants that are widely scattered, where production can take place in accordance with the needs of the community lying closest to the plants; by manufacturing products at plants advantageously located to ore supplies; by reducing overhead expenses; and by eliminating unnecessary sales agencies, substantial economies can be effected. The combination being formed for this sole purpose, I am unable to see wherein it is tainted with illegality.

Will a merger of these companies violate the Act of Oct. 15, 1914, commonly known as the Clayton act?

What these companies plan to do is to merge the Inland with the Midvale and to acquire outright the physical assets of the Republic. To accomplish this shares of the stock of the new company will be issued to the stockholders of the old

companies in exchange for their present holdings, accompanied in the case of the Inland by a payment of something like \$24,000,000 to retire its preferred stock.

In the light of the facts which I have set forth, I fail to discover any ground for asserting that the Clayton Act will be violated

Will a merger of these companies violate the act of April 10, 1918, commonly known as the Webb act?

As in the case of the other merger, these companies, too, belong to an association formed to handle export trade alone and functioning under the permission which this act gives. In my opinion it is impossible to conceive how a merger of these companies will in any way offend this act.

Will a merger of these companies violate the act of Sept. 26, 1914, commonly known as the Federal Trade Commission act?

Under a like heading in dealing with the other merger I have pointed out the impropriety of my expressing any opinion upon this question. For exactly the same reasons I must pursue a similar course here.

Very respectfully,

H. M. DAUGHERTY,
Attorney General.

Hon. CALVIN COOLIDGE,
President of the Senate.

July 21, 1922.

Source: The Iron Age, July 27, 1922, p. 208.

EXHIBIT 2
Summary of manufacturing plants owned by subsidiary companies of United States Steel Corporation

Name of operating company	Number of blast furnaces		Res- semer hearth steel works		Open slab- bing, billet, and sheet bar mills		Plate mills		Puddling mills		Skelp mills		Mer- chant, bar, hoop, and cotton tie mills		Struc- tural shape mills		Rod mills		Wire mills		Sheet mills, black plate mills, and tin- plate mills				Number of tube mills		Number of bridge and structural plants		Number of foundries		Miscellaneous works	
	Number of works	Number of con- verters	Number of works	Number of fur- naces	Number of works	Number of mills in works	Number of mills in works	Number of works	Number of pud- dling furnaces	Number of muck rolls	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of rod mills in works	Number of works	Departments for galvanizing	Departments for finishing	Number of hot mills in works	Departments for finishing	Departments for galvanizing	Number of works	Number of tube mills	Number of bridge and structural plants	Number of foundries	1 axle works. 1 armor plant. 2 bolt and rivet depart- ments.	2 cement plants. 1 spike, bolt, and nut factory. 1 frog and switch works. 2 zinc smelting works. 2 cut nail mills. 1 galvanizing works.		1 axle works. 13 miscellaneous.
Carnegie Steel Co.....	21	3	8	4	60	3	11	2	3	7				3	6	2	8										2		1			
National Steel Co.....	17	5	10	1	6	6	14	1						11	42																	
American Steel Hoop Co.	3								8	164	8																					
Illinois Steel Co.....	19	2	5	1	10	2	6	2	1	2			2	8		1	2															
Lorain Steel Co.....	2	1	2			1	2	1																								
American Steel & Wire Co.	12	3	6	3	15	4	6	1	3				3	8		13	21	22	17	6												
National Tube Co.....	5	2	4			2	2			4	121	5	5	22																		
Shelby Steel Tube Co.													5	19																		
American Sheet Steel Co.				2	10	9	12			1	19	1	1																			
American Tin Plate Co.						1	1																									
American Bridge Co.				1	11	1	1																									
Union Steel Co.....	5			2	24	2	5						1	3		1	3															
Grand total	84	16	35	14	136	31	60	6	6	13	13	304	14	12	45	19	64	3	11	16	27	24	19	6	47	446	22	6	24	27	22	13 miscellaneous.

[illegible]

Summary of manufacturing plants owned by subsidiary companies of United States Steel Corporation—Continued

[illegible]

Summary of manufacturing plants owned by subsidiary companies of the United States Steel Corporation—Continued

Operating company and name of works	Location of works	Number of blast furnaces				Bes- smer steel works		Open hearth steel works		Bloom- ing, slab- bing, and sheet bar mills		Plate mills		Puddling mills			Skelp mills		Mer- chant bar, hoop, and cotton tie mills		Struc- tural shape mills		Rod mills		Wire mills		Sheet mills, black plate mills, and tin- plate mills				Number of tube mills		Number of bridge and structural plants		Number of foundries		Miscellaneous works	
		Number of works	Number of con- verters	Number of works	Number of fur- naces	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works	Number of mills in works	Number of works		Number of mills in works
La Belle Works.	Wheeling, W. Va.																																					
Chester Works.	Chester, W. Va.																																					
New Castle Works.	New Castle, Pa.																																					
Shenango Works.	do.																																					
Ellwood Works.	Ellwood City, Pa.																																					
Star Works.	Pittsburgh, Pa.																																					
Monongahela Works.	do.																																					
United States Works.	Demmler, Pa.																																					
Pittsburgh Works.	New Kensington, Pa.																																					
Pennsylvania Works.	do.																																					
National Works.	Monessen, Pa.																																					
Hubert Works.	South Con- neville, Pa.																																					
Total American Tin Plate Co.							1	1																														

[illegible]

[illegible]

*These are used only for producing blanks for seamless tubing.

IRON ORE MINES—LIST OF ACTIVE IRON ORE MINES OWNED BY SUBSIDIARY COMPANIES IN THE LAKE SUPERIOR ORE DISTRICT

Located on Marquette range:

Bessie mine.	Moore mine.
Hartford mine.	Negaunee mine.
Queen mine (three-fourths interest).	Stegmiller mine.
Section 16 mine (three-fourths interest).	Winthrop mine.
Section 21 mine (three-fourths interest).	Volunteer mine.
Hard ore mine (three-fourths interest).	
Hematite ore mine (three-fourths interest).	

Located on Menominee range:

Columbia mine.	Hilltop mine
Forest mine.	Chapin mine.
Hope mine.	Aragon mine.
Mansfield mine.	Cundy mine.
Michigan mine.	Iron Ridge mine.
Riverton mine.	Pewabic mine (one-half interest).
Cuff mine.	

Located on Gogebic range:

Norrie mine.	Tilden mine.
Aurora mine.	Atlantic mine.
Chicago mine.	

Located on Vermillion range:

Pioneer mine.	Zenith mine.
Savoy mine.	Chandler mine (one-half interest).
Sibley mine.	Soudan mine.

Located on Mesaba range:

Mountain iron mine.	Hull mine.
Stephens mine.	Pillsbury mine.
Virginia mine.	Rust mine.
Fayal mine.	St. Clair mine.
Auburn mine.	Sellers mine.
Genoa mine.	Spruce mine.
Chisholm mine.	Donora mine.
Sauntry mine.	Sharon mine.
Clark mine.	Penobscot mine.
Adams mine.	Sweeny mine.
Burt mine.	Union mine (one-half interest).
Day mine.	Biwabik mine (one-fourth interest).
Duluth mine.	Mahoning mine (one-fifth interest).
Glen mine.	

In addition to the foregoing active mines, the subsidiary companies own on the ranges named extensive acreages of land, much of which contain large quantities of ore yet unopened, and on which there are also great quantities of standing timber designed for future use in mining operations.

COKING COAL PROPERTIES OWNED BY SUBSIDIARY COMPANIES

In the Connellsville and lower Connellsville districts in Westmoreland and Fayette Counties, Pa.:

Acreage of coal.....	acres..	59,740
Acreage of surface.....	do....	18,273
Number of coking coal plants (beehive ovens).....		60
Number of beehive ovens.....		16,661

In the Pocahontas district, McDowell County, W. Va.: Lease of 50,000 acres of coking coal. On this property there are to be constructed coking coal plants which will have in all 3,000 beehive ovens. Work is now in progress on the first 1,000 ovens

Byproduct coke ovens, located at Benwood, W. Va., at Sharon, Pa., and South Sharon, Pa., in all.....ovens..857

STEAM COAL PROPERTIES OWNED BY SUBSIDIARY COMPANIES

In Washington, Allegheny, Somerset, Green, and Fayette Counties, Pa., an acreage of steam and gas coal is owned to the amount of ----- acres-- 24, 375
Sundry tracts of steam coal located at or near furnaces and mill plants of the subsidiary companies in Pennsylvania, West Virginia, Ohio, and Indiana, and in Williamson County, Ill., of an acreage of about ----- acres-- 6, 500

Total steam coal ----- do-- 30, 875

MISCELLANEOUS PROPERTIES OWNED BY SUBSIDIARY COMPANIES

Water-supply plants.—In the Connellsville coke regions various water-supply plants having eight large reservoirs and seven pumping stations and extensive pipe lines. Water is supplied from these plants for use in manufacturing coke, and is also furnished for general purposes.

Natural-gas property.—Carnegie Natural Gas Co. owns in Pennsylvania, Ohio, and West Virginia extensive natural-gas territory, either owning or having under lease about 120,000 acres; also owns 1,134 miles of pipe lines and two pumping stations.

Extensive natural-gas territory and pipe lines are also owned by the American Sheet Steel Co. in Pennsylvania, the gas therefrom being used at its Vandergrift plants; also by American Tin Plate Co. adjacent to its plants in the Gas Belt district in Indiana.

Ore docks.—Large forwarding ore docks situated on Lake Superior are owned as follows: At Two Harbors, Minn., owned by Duluth & Iron Range Railroad Co., five docks; at Duluth, Minn., owned by Duluth, Missabe & Northern Railway Co., three docks.

Receiving ore docks are owned at the furnace plants at Chicago, Ill.; Milwaukee, Wis.; Lorain, Ohio, and Cleveland, Ohio.

Receiving and forwarding docks are owned at Lake Erie ports as follows: At Conneaut, Ohio, by Pittsburg and Conneaut Dock Co.; at Ashtabula, Ohio, by Minnesota Dock Co. and National Steel Co.; at Fairport, Ohio, by Pennsylvania & Lake Erie Dock Co.; at Buffalo, N. Y., by Minnesota Dock Co.

Summary of standard-gage railroad mileage owned by subsidiary companies, Dec. 31, 1902

Owned or operated by—	Line owned	Branches and spurs	Operated under trackage rights	Second tracks	Slidings
Duluth & Iron Range R. R.:					
Duluth to Ely, Minn.	117.22		0.80		
Tower Junction to Tower, Minn.	1.40				
Allen Junction to Virginia, Minn.	25.31				117.33
McKinley to Eveleth, Minn.	8.63				
Waldo to Drummond.	8.50				
Two Harbors to Wyman.				49.85	
Summit Switch to Eveleth Switch.				14.43	
Between south end of Allen Junction and West Switch at Wyman.				1.30	
Branches and spurs to mines, etc.		43.80			
Total, D. & I. R. R.	161.06	48.80	.80	65.58	117.33
Duluth, Missabe & Northern Ry.:					
Stony Brook to Mount Iron.	48.62				
Missabe Junction to Columbia Junction.	29.34				
Iron Junction to Biwabik.	15.54				
Wolf to Hibbing.	17.07				54.36
Main line branches.	18.57				
Proctor to Ore Dock.				7.20	
Shaw to Wolf Switch.				6.00	
Second track branches.				10.89	
Branches and spurs to mines, etc.		31.28			4.18
Total, D., M. & N. Ry.	129.14	31.28		24.09	58.54

Summary of standard-gage railroad mileage owned by subsidiary companies, Dec. 31, 1902—Continued

Owned or operated by—	Line owned	Branches and spurs	Operated under trackage rights	Second tracks	Sidings
Elgin, Joliet & Eastern Ry.:					
Waukegan, Ill., to Porter, Ind.	129.94				
Walker to Wilmington, Ill.	33.30				
Normantown to Aurora, Ill.	9.65				107.53
East Joliet to Joliet, Ill.	1.79				
State Line to Whiting, Ind.	7.08				
Griffith to Clarke Junction, Ind.	10.67				
East Joliet to Frankfort, Ill.				13.50	
Spurs to coal mines, quarries, etc.		22.11			
State Line to 112th St. (C. & W. I. Ry.)			4.80		
112th St. to 98th St. (Belt Ry.)			2.05		
Total, E., J. & E. Ry.	192.43	22.11	6.85	13.50	107.53
Chicago, Lake Shore & Eastern Ry.:					
South Chicago, Ill., to Clarke Junction, Ind.	9.31			9.31	
At Brimmon and at South Chicago		69.65			
At Bridgeport (S. & S. Ry.)		9.93			
At North Chicago (C. & K. Ry.)		5.08			
At Joliet (J. & B. I. Ry.)		23.10			
At Milwaukee (M., B. V. & C. Ry.)		18.15			
Chicago Heights to Westville, Ill. (C. & E. I. R. R.)			111.20		
East Joliet, Ill., to Clarke Junction, Ind. (E., J. & E. Ry.)			44.27		
Total, C., L. S. & E. Ry.	9.31	125.91	155.47	9.31	
Bessemer & Lake Erie R. R.:					
Kremis to Osgood.	8.87				.87
North Bessemer to Conneaut Harbor.	146.09				
North Bessemer to Bessemer (leased to Union R. R.)	6.97				
Brachton to Hilliard.	10.30	20.74		18.54	119.36
Conneaut Junction to Wallace Junction	8.71				
Main line branches	6.42				
Meadville to Linesville.	20.54				
Lynces Junction to Exposition Park (M., C. L. & L. R. R.)	1.20				
Meadville to Valonia.	1.05				
Cascade to Wallace Junction (N. Y. C. & St. L. R. R.)			12.40		
Pittsburgh Junction to Butler (B. & O. R. R.)			.50		
Total, B. & L. E. R. R.	210.15	20.74	12.90	18.54	120.23
Union R. R.: East Pittsburgh to Streets Run, Pa., and Duquesne Junction to Duquesne, Pa.	8.64	10.43		8.43	46.36
McKeesport Connecting Ry.: McKeesport, Pa., to Port Perry	.58				
Benwood & Wheeling Connecting Ry.: Riverside yards.	7.82				
Waukegan & Mississippi Valley Ry.: Between E. J. & E. and C. N. W. Rys. at Waukegan.	4.41				
Newburg & South Shore Ry.: At Newburg and Cleveland.	4.53				18.47
Pittsburgh & Ohio Valley Ry.: At Allegheny, Braddock, Neville Island, and Rankin, Pa.	12.58				
Northern Liberties Ry.: At Pittsburgh.	.67				
Johnstown & Stony Creek R. R.: Bedford Station to Stony Creek Bridge	2.44				
The Lake Terminal R. R.: Lorain Steel Co.'s plant to C. L. & W. R. R.	11.66				
Youghiogheny Northern Ry.: Broad Ford to Summit, Pa.	1.92				
Etna & Montrose R. R.: Etna to Pine Creek, Pa.			2.00		
South West Connecting Ry.: Marguerite Coke Works to station 56 of Bessemer Coal Co.	2.20				.50
Mount Pleasant & Latrobe R. R.: Standard Coke Works, Mount Pleasant, Pa., to S. W. Pa. R. R.	1.06				
Elwood, Anderson & Lapelle Ry.: Elwood, Ind., to connections with L. E. and W. and P. C. C. & St. L. Rys.	1.20				2.60
Masontown & New Salem R. R.: Buffington to Moser Run Junction (leased to Pennsylvania R. R.)	6.04				
Total mileage.	767.84	259.27	178.02	139.45	471.56

Standard gage railroad equipment owned by subsidiary companies, Dec. 31, 1902

	Duluth and Iron R. R.	Duluth, Missabe & Nor. Ry.	Elgin, Joliet & E. Ry.	Chicago, L. S. & E. Ry.	Bessemer & L. E. R. R.	Union R. R. & Subs.	All other rail- roads	Steel and coke companies	Total
Locomotives.....	70	40	54	62	86	75	52	32	471
Cars:									
Passenger.....	9	8	3		31		2		53
Combination (passenger and baggage).....	3	3			7				13
Combination (baggage, mail, and express).....	2	1			7				10
Officers'.....	2	2			3				7
Box, freight.....	85	62	433	1,636	193	4	81	4	2,498
Flat.....	321	274	87	402	202	16	106	35	1,443
Pig iron.....				25					25
Iron ore.....	2,581	3,475		496					6,552
Iron ore, steel.....	350	5			3,585	100	24	300	4,364
Coal.....	15		2,018	212					2,245
Coke.....				976				2,746	3,722
Stock.....	2	2		4	19				27
Gondola, steel.....				150	2,102			50	2,302
Gondola, steel hopper.....				125			80	10	215
Gondola, wooden.....					1,749		140	133	2,022
Wire.....				21					21
Fence.....								8	8
Log.....	175								175
Refrigerator.....	12	9							21
Caboose.....	39	29	29	11	51	1			160
Boarding.....	8	4							12
Dump and work.....			66	70			32		168
Steam shovel and tool.....	4	1		1					6
Pile driver and tool.....	2								3
Wrecking.....	4	1		1	11	1			18
Sundry road.....	24	1		41	6		1	1	74
Total.....	3,638	3,877	2,636	4,171	7,967	122	466	3,287	26,164

MARINE EQUIPMENT

Pittsburgh Steamship Co.:	
Steamers.....	71
Barges.....	43
Total.....	114

During the season of 1902, extending from Apr. 3, to Dec. 15, 1902, this fleet carried 10,777,636 tons of iron ore and 179,217 tons of miscellaneous freight; total 10,956,853 tons. The gross earnings of the fleet were \$9,059,999.94.

Source: First annual report of United States Steel Corporation for fiscal year ended Dec. 31, 1902.

EXHIBIT 3

Excerpt from testimony of Judge Elbert H. Gary, chairman, United States Steel Corporation, in *United States v. U. S. Steel Corporation*, volume 12, transcript of record in the District Court of the United States for the District of New Jersey (pp. 4901-4904).

Between the date of the first Gary dinner, so-called, and the date of this meeting, February 18, 1909, there had always been fluctuating prices. I knew that business that naturally would come to us; that is, business from regular customers would go elsewhere, and we would follow it up and find from the customer the reason for the business going elsewhere; and that increased to some extent. We had prevented the demoralization of business, as I call it; we had by our business friendship and our coming close together and keeping one another posted, prevented the wide and sudden fluctuation which I particularly was attempting to prevent; but there had been changes from time to time and sales made below the advertised price, so to speak, what are considered the trade-paper prices, but nevertheless I believed it was still good business and good morals to continue to furnish the information which we had been furnishing from

time to time until we reached this period when it was perfectly evident that there was a disposition on the part of everyone outside of ourselves to do just exactly as they pleased; that is, to publish one price and sell at another, to sell far below the prices that were supposed to exist without notifying us. That was the point, as it seemed to me, that when the competitors in business were making radical changes in prices below their published prices, they ought in fairness to notify the rest and especially to notify us, because we were notifying them always. We were not obligated to do it, except as two men who profess to be friends, or professing to give information one to another as to what they were doing, naturally ought to tell the truth about it, to speak in plain words. You say, Were they obligated by any agreement, express or implied? I say no. It was absolutely understood that they could do as they pleased, but there is a fair way of doing business that we all know nowadays in this country, and an unfair way, which I hope we all know. Our instructions to our people were positive, to let us know if they wanted to make any changes in prices, and then if we made any changes we would put them in the trade journals, and let it be known to our customers generally; we would treat our customers all alike, or try to. Those were our instructions, and not only that, if any of our customers asked us about our prices we told them and told them frankly what we were doing.

Excerpts from *Financial Analysis of the Steel Industry published by the magazine Steel and/or its predecessor Iron Trade Review, 1928-38, purporting to show certain facts respecting certain producers of rolled steel having a rated annual ingot capacity in excess of 1 million tons*

EXHIBIT 4

RATED INGOT CAPACITY, GROSS TONS

Name of company	1933	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928
United States Steel Corporation.....	25,790,000	25,790,000	25,772,400	26,637,000	27,341,900	27,341,900	27,341,900	27,841,300	26,075,000	24,201,500	23,495,100
Bethlehem Steel Corporation.....	10,042,000	9,360,000	9,360,000	9,360,000	9,360,000	9,360,000	9,360,000	9,540,000	8,610,000	8,000,000	8,000,000
Republic Steel Corporation.....	6,500,000	6,354,342	6,053,000	6,053,000	5,013,000	5,013,000	4,968,000	4,968,000	4,968,000	(1)	(1)
Jones & Laughlin Steel Corporation.....	3,660,000	3,660,000	3,660,000	3,660,000	3,660,000	3,660,000	3,420,000	3,420,000	3,420,000	3,270,000	3,000,000
Youngstown Sheet & Tube Co.....	3,120,000	3,120,000	3,120,000	3,120,000	3,120,000	3,120,000	3,120,000	3,120,000	3,120,000	2,717,000	3,247,200
National Steel Corporation.....	3,400,000	2,700,000	2,700,000	2,240,000	2,232,000	2,232,000	2,232,000	2,232,000	2,000,000	(1)	(1)
American Rolling Mill Co.....	2,669,520	2,551,120	2,531,120	2,431,720	2,431,720	2,200,000	2,200,000	2,000,000	1,902,000	1,557,500	467,000
Inland Steel Co.....	2,340,000	2,340,000	2,340,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	1,870,000	1,600,000
Wheeling Steel Corporation.....	1,750,000	1,750,000	1,750,000	1,750,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,273,000

CAPITALIZATION PER TON INGOT CAPACITY

Name of company	1933	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928
United States Steel Corporation.....	\$60.01	\$66.61	\$65.28	\$62.97	\$71.02	\$71.70	\$73.40	\$75.52	\$82.56	\$83.12	\$92.79
Bethlehem Steel Corporation.....	64.67	70.16	67.18	63.54	65.34	66.45	67.84	70.44	77.86	91.85	75.68
Republic Steel Corporation.....	49.31	51.53	51.12	45.53	47.21	48.56	50.10	52.81	55.52	(1)	(1)
Jones & Laughlin Steel Corporation.....	57.35	54.27	54.71	48.36	46.79	47.51	53.16	56.80	59.05	58.17	69.00
Youngstown Sheet & Tube Co.....	73.04	63.95	63.92	62.18	61.32	62.93	66.13	71.43	68.23	79.29	62.03
National Steel Corporation.....	53.62	66.55	62.66	72.41	65.37	63.75	64.55	66.08	57.30	(1)	(1)
American Rolling Mill Co.....	48.30	51.98	43.31	44.98	40.72	43.62	46.72	56.06	59.63	58.47	83.25
Inland Steel Co.....	61.27	61.27	52.93	54.00	47.55	46.95	60.27	52.82	47.81	53.26	57.76
Wheeling Steel Corporation.....	62.44	63.07	62.75	60.53	66.25	65.75	66.64	70.53	75.90	75.36	80.78

¹ Not formed in 1929.

Excerpts from Financial Analysis of the Steel Industry published by the magazine Steel and/or its predecessor Iron Trade Review, 1928-38, purporting to show certain facts respecting certain producers of rolled steel having a rated annual ingot capacity in excess of 1 million tons:—

Continued

TOTAL EARNINGS PER TON INgot CAPACITY

Name of company	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928
United States Steel Corporation.....	\$ 0.02	\$3.93	\$2.15	\$0.23	\$ 0.61	\$ 1.14	\$ 2.41	\$0.66	\$4.22	\$8.05	\$5.95
Bethlehem Steel Corporation.....	\$1.23	4.14	2.18	1.23	.78	.21	3.33	.01	3.60	6.68	3.73
Republic Steel Corporation.....	\$2.55	2.20	2.41	1.35	3.03	3.13	3.56	3.09	.05	(1)	(1)
Jones & Laughlin Steel Corporation.....	\$ 1.04	1.73	1.45	3.03	3.61	3.36	2.18	3.52	2.82	6.56	5.40
Youngstown Sheet & Tube Co.....	3.65	4.74	4.56	1.88	.55	3.24	3.05	3.85	3.42	9.29	4.39
National Steel Corporation.....	2.67	7.49	5.50	5.98	3.59	3.04	1.70	2.94	4.61	(1)	(1)
American Steel Co.....	3.45	3.58	3.25	2.79	1.33	.67	.09	3.41	1.05	4.94	8.38
Inland Steel Co.....	2.90	6.21	6.24	5.69	2.83	1.07	3.72	1.56	3.89	7.25	6.61
Wheeling Steel Corporation.....	\$ 1.15	3.30	3.20	2.74	1.27	.41	3.15	3.11	2.93	8.88	6.50

PERCENT TOTAL EARNINGS ON CAPITALIZATION

United States Steel Corporation.....	0.04	5.83	3.30	0.36	\$ 0.85	\$ 1.59	\$ 3.28	0.88	5.11	10.11	6.42
Bethlehem Steel Corporation.....	1.91	5.91	3.25	1.94	1.20	3.33	3.197	1.12	4.63	7.28	4.93
Republic Steel Corporation.....	3.11	4.20	4.72	2.97	3.07	3.27	3.12	3.06	3.01	(1)	(1)
Jones & Laughlin Steel Corporation.....	3.82	3.19	2.66	3.07	3.133	3.286	3.4.10	3.91	4.78	11.27	8.90
Youngstown Sheet & Tube Co.....	.89	7.41	7.13	3.03	.89	3.198	3.4.61	3.1.20	5.02	11.71	7.08
National Steel Corporation.....	4.80	11.26	8.78	8.26	5.49	3.20	2.56	4.45	8.04	(1)	(1)
American Rolling Mill Co.....	3.93	7.52	7.53	6.21	3.27	1.53	.21	3.72	1.76	8.44	10.07
Inland Steel Co.....	4.73	10.14	11.79	10.53	5.96	2.28	3.1.43	2.96	1.75	13.59	11.44
Wheeling Steel Corporation.....	1.84	5.23	5.09	4.52	1.93	1.18	3.1.73	3.1.72	3.85	8.51	8.04

¹ Not formed in 1929.

² Derived figure, i. e., reported total earnings (or loss) divided by ingot capacity.

³ Indicates loss.

NOTE.—In cases where a company's reported figures for a given year differed from those of a previous report for the same year, the later figures are used.

EXHIBIT 5

S. RES. 286.

IN THE SENATE OF THE UNITED STATES, APRIL 20 (CALENDAR DAY MAY 12), 1922.

Whereas definite reports in the daily press and in financial journals state that there is about to be consummated a merger of seven of the largest iron and steel corporations, namely, Midvale Steel and Ordnance Company, Republic Iron and Steel Company, Lackawanna Steel Company, Inland Steel Company, Youngstown Sheet and Tube Company, Steel and Tube Company of America, and Brier Hill Steel Company, having a total annual capacity of more than ten millions tons of steel; and

Whereas it is also reported that the Bethlehem Steel Corporation, while not a part of the present merger, will join the combination when it has been successfully accomplished; and

Whereas the complete consummation of this plan will result in the creation of a billion-dollar corporation, controlling substantially all of the steel-producing capacity of the country which is not now controlled by the United States Steel Corporation; and

Whereas this will create a complete monopoly of the steel industry in the hands of two gigantic corporations, resulting inevitably in the suppression of such competition as now exists in the manufacture and sale of this essential product and in the restraint of trade and commerce among the several States and the District of Columbia and with foreign nations; and

Whereas experience has shown the impossibility of dealing effectively with such combinations and mergers after they have been consummated, regardless of the damage which they may inflict upon competitors and of the injury to the public welfare; and

Whereas section 4 of the Sherman Antitrust Law (Act of July 2, 1890) specifically provides:

"The several circuit courts of the United States are hereby invested with jurisdiction to prevent and restrain violations of this Act, and it shall be the duty of the several district attorneys of the United States, in their respective districts, under the direction of the Attorney General, to institute proceedings in equity to prevent and restrain such violations":

Resolved, That the Attorney General of the United States and the Federal Trade Commission be requested to inform the Senate as soon as possible what steps they have taken or propose to take to ascertain the purposes and probable effects of the proposed merger; what have been the results of any investigations which they may have conducted; and what actions they have instituted to protect the public interest:

Resolved Further, That the Attorney General be further requested to inform the Senate whether or not it is advisable, in his opinion, to proceed under the appropriate provisions of the Sherman law and the Clayton law to prevent and restrain this impending combination.

A+test:

GEORGE A. SANDERSON, *Secretary*.

EXHIBIT 6

JUNE 5, 1922.

To the PRESIDENT OF THE UNITED STATES SENATE.

SIR: By Resolution No. 286, agreed to on May 12, 1922, the Attorney General of the United States and the Federal Trade Commission were requested to inform the Senate what steps had been taken or they proposed to take, to ascertain the purpose and probable effects of the proposed merger of certain steel companies therein named; to inform the Senate as to results of any investigations which they may have conducted and what actions they have instituted to protect the public interest.

Insofar as this Resolution is directed to the Federal Trade Commission, that Commission presents the following report.

In the early part of December 1921 the attention of the Federal Trade Commission was attracted by reports and rumors of proposed and impending mergers of considerable importance in many lines of industry. The Commission thereupon by resolution directed its proper officials to seek all possible information with reference to these proposed mergers and to keep the Commission advised as to their progress. Prior to the adoption of Senate Resolution 286, the proposed

merger among the steel companies was under observation by the Commission and it was collecting information with reference thereto.

Up to the time of this resolution, however, none of these proposed mergers had reached a sufficiently definite or concrete stage to warrant the Commission in reaching a conclusion with reference to the legality of such proposed mergers.

Subsequent to the adoption of the Resolution in question it became apparent that the movement toward a merger in the steel industry had taken on the form of a combination of the Bethlehem Steel Corporation and its subsidiaries with the Lackawanna Steel Co. and its subsidiaries on the one hand, and a like combination of the properties of the Midvale Steel & Ordnance Co., the Republic Iron & Steel Co. and the Inland Steel Co., these three latter companies proposing to form a new corporation to be known as North American Steel Co.

The Bethlehem-Lackawanna merger has advanced to a stage where it is practically complete except for the necessary ratification by the stockholders of the two companies, and we are informed that this remaining detail will be completed as soon as possible.

The Federal Trade Commission had considerable information already at hand with reference to the position of the Bethlehem Steel Corporation and its subsidiaries and the Lackawanna Steel Co. and its subsidiaries in the steel industry and the relation of each to each other and to competitive conditions in the steel market generally. This information has been supplemented by inquiry and research with the result that the Federal Trade Commission upon the information before it, has reason to believe, in the language of its constituent act, that the proposed Bethlehem-Lackawanna merger then consummated will constitute an unfair method of competition in that it contains a dangerous tendency unduly to hinder competition and to restrain trade and commerce, and that a proceeding by the Commission in this respect is in the public interest.

In this aspect under its constituent act it becomes the duty of the Federal Trade Commission to issue its complaint and to state its charges in that behalf. The Federal Trade Commission therefore issued its complaint directed to the Bethlehem and Lackawanna companies on Saturday, June 3, and for the further information of the Senate attaches a copy of this complaint hereto.

Of course the issue of the complaint is merely the institution of formal proceedings to test the legality of the proposed merger. In the ordinary course answer will be filed to this complaint and testimony will be taken both on behalf of the Government and of the two steel companies. At the conclusion of this testimony and after argument the Commission will determine the facts and apply the law thereto. And only if such a conclusion is justified by the facts will an order to cease and desist from the proposed merger be issued. Otherwise, the complaint will be dismissed. In other words, in the issue of the complaint the Federal Trade Commission expresses no final judgment as to the legality of the proposed merger.

If an order to cease and desist from the proposed merger is issued, it is, of course subject to review by the United States Circuit Court of Appeals.

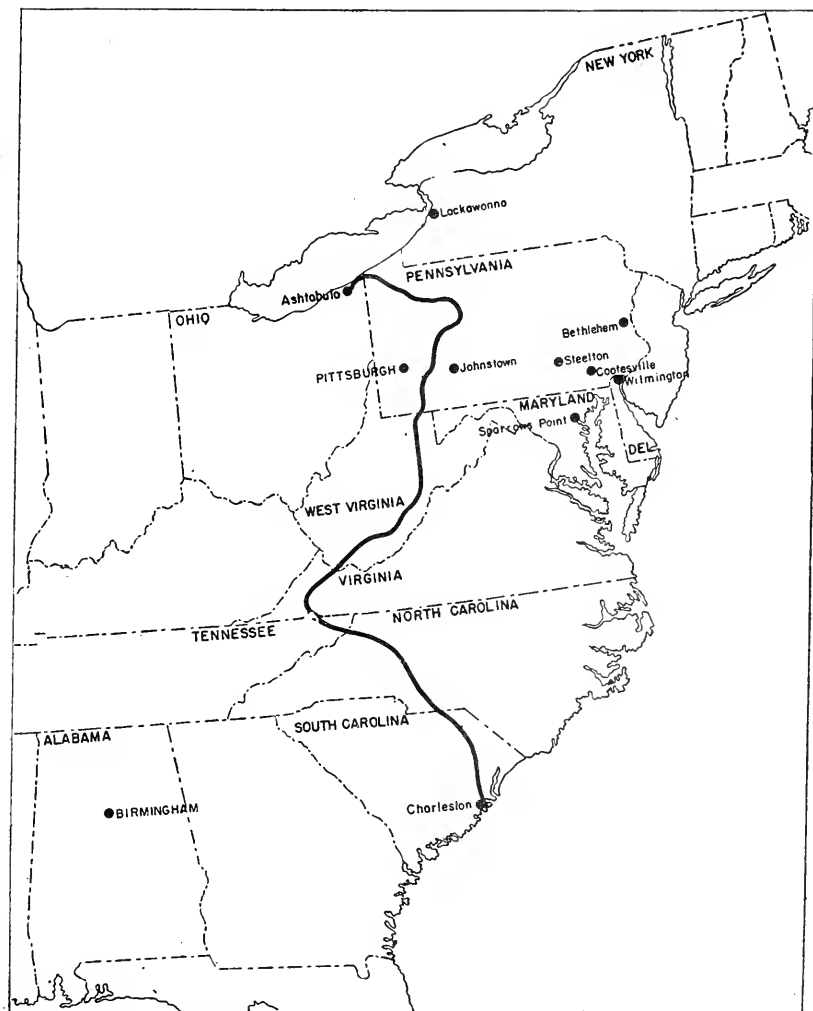
THE MIDVALE-REPUBLIC-INLAND MERGER

With reference to the proposed Midvale-Republic-Inland merger and the formation of the North American Steel Co., we are advised that tentative arrangements entered into between the executive officers of these three companies have been settled upon and agreed to on behalf of the Board of Directors of the Companies and tentative arrangement has been made with Kuhn, Loeb & Co., for the financing of the proposed merger. The actions of these three Companies have not so far advanced toward completion as to reveal the essential facts with the same precision and comprehensiveness as in the Bethlehem-Lackawanna case, and the Federal Trade Commission therefore has not yet been able to reach a reason to believe either that the proposed three-company merger will or will not carry the same tendency and capacity as in the case of the Bethlehem-Lackawanna merger above referred to. The details of this plan are, however, being carefully followed and so soon as the Commission is in possession of sufficient information it will make further report to the Senate as to the second of these proposed mergers.

By the Commission:

Respectfully submitted,

NELSON B. GASKILL, *Chairman.*

EXHIBIT 7¹¹ Explanatory material appears on following page

HISTORICAL DEVELOPMENT OF BETHLEHEM STEEL CORPORATION

ILLUSTRATION OF THE GEOGRAPHICAL ADVANTAGES OF LOCATION OF CERTAIN COMPETITIVE PLANTS ACQUIRED BY BETHLEHEM STEEL CORPORATION, 1916-23.

Sectional map of the United States showing the extent of the territory, generally east and south of Pittsburgh, to which the all-rail freight rates applicable on rolled steel, carloads, from one or more of the rolling mills acquired by Bethlehem Steel Corporation are less than from either Pittsburgh or Birmingham. This graph ignores the very considerable rate advantage of Lackawanna (Buffalo), Sparrows Point, and Wilmington, over Pittsburgh and Birmingham (also Bethlehem) to interior points tributary to the Great Lakes or South Atlantic ports, on shipments via water or water and rail routes.

AREA OF TERRITORY EAST OF ASHTABULA-CHARLESTON LINE

<i>State</i>	<i>Area (sq. miles)</i>
Maine	33,040
New Hampshire	9,341
Vermont	9,564
Massachusetts	8,266
Rhode Island	1,248
Connecticut	4,965
New York	49,204
New Jersey	8,224
Delaware	2,370
Maryland	12,327
District of Columbia	70
*Pennsylvania	30,392
*West Virginia	4,745
*Virginia	38,014
*North Carolina	34,909
*South Carolina	2,677
Total	249,356

*Does not include areas of counties split by the line.

EXHIBIT 8

J. A. CAMPBELL,
President

THE YOUNGSTOWN SHEET & TUBE CO.,
Youngstown, Ohio, May 23, 1922.

NELSON B. GASKILL, ESQ.,
Chairman, The Federal Trade Commission, Washington, D. C.

DEAR SIR: Your telegram of May 13 was received in due time and it was our intention to comply with your request before any plans were consummated or actual transfers made.

We held conferences with the other steel companies and inspected their plants; we also estimated valuations of the different properties with a view of merging our interests with theirs. Before any agreement, however, was arrived at, this company, for reasons of its own, decided to withdraw from any further negotiations along that line. We are not advised as to whether or not the other companies are still carrying on negotiations.

If there is any further specific information you desire, we will be glad to comply with any request you may make for it.

Yours very truly,

(Signed) J. A. CAMPBELL, *President.*

D.

EXHIBIT 9

STATEMENT OF PROMOTERS OF PROPOSED MERGER OF MIDVALE STEEL & ORDNANCE CO., REPUBLIC IRON & STEEL CO. AND INLAND STEEL CO.

SEPTEMBER 28, 1922.

Mr. W. E. Corey, chairman of the board of Midvale Steel & Ordnance Co., Mr. John A. Topping, chairman of the board of Republic Iron & Steel Co., and Mr. L. E. Block, chairman of the board of Inland Steel Co., have authorized the following statement:

At a meeting held today the entire situation arising from the action of the Federal Trade Commission was reviewed and the conclusion was reached that under existing circumstances it is not possible to proceed with the proposed merger of the Midvale Steel & Ordnance Co., the Inland Steel Co., and the Republic Iron & Steel Co. While all of the eminent counsel who have been consulted agree that the proposed merger would be legal in every respect and while its consummation would not have restrained but have intensified competition, the final determination of the questions involved would delay the carrying out of the plan to such an extent, that the parties in interest do not deem it advisable to proceed. Pending such final determination of the questions involved, the financing of the proposed merger would not be possible, and it is not feasible to proceed with the merger without such financing.

FEDERAL TRADE COMMISSION *v.* MIDVALE STEEL & ORDNANCE CO., REPUBLIC IRON & STEEL CO., AND INLAND STEEL CO. DOCKET NO. 905

ORDER OF DISMISSAL

A formal statement having been filed with the Commission by Chadbourne, Babbitt, and Wallace, attorneys for the respondents, stating that the proposed merger, consolidation, and the combination charged in the complaint in this proceeding had been entirely abandoned and that all acts for the consummation of such merger, consolidation, and combination had been discontinued.

IT IS ORDERED that the complaint herein be, and the same is hereby dismissed. By the Commission.

[SEAL]

OTIS B. JOHNSON, *Secretary.*

(October 21, 1922.)

EXHIBIT 10

YOUNGSTOWN, INLAND MERGING AS THIRD LARGEST PRODUCER ¹

Provided their directors and stockholders assent, the Youngstown Sheet & Tube Co., Youngstown, Ohio, and the Inland Steel Co. Chicago, will be merged into the third largest steel producing unit in the country. Preliminary details

¹ Iron Trade Review, February 2, 1923.

were concluded January 25 and the consolidation is expected to be declared operative early in April.

James A. Campbell, now president of the Youngstown Co., will be president of the new organization, with headquarters at Youngstown. L. E. and P. D. Block, at present chairman and president, respectively, of the Inland Co., will become vice presidents in charge of production and sales of the western plants in the Chicago district.

Details of financing include the issuance of 3,200,000 shares of common stock in the new company, of which 2,000,000 shares will be distributed among Youngstown stockholders and 1,200,000 among Inland stockholders, the latter on a share-for-share basis. To adjust assets, in lieu of the regular March common dividends, Youngstown will distribute \$1,250,000 and Inland \$6,000,000.

It has not yet been announced what changes are in contemplation for the other securities of the two companies. The funded debt of Youngstown totals \$75,000,000 and of Inland \$12,525,000. Preferred shares of Youngstown mount up to 12,241,000 and of Inland 10,000,000. Common shares of Youngstown total 987,606 and of Inland 1,182,799. It is expected that many economies of operation will be effected, but at present few changes in personnel are said to be probable.

A revised statement of the capacities of the two companies, given in the accompanying table, shows the combined steel ingot total to be 4,840,000 tons. This compares with 23,035,000 tons for the United States Steel Corporation and 7,900,000 tons for the Bethlehem Steel Corporation. Ranking after the Youngstown-Inland combination come Jones & Laughlin Steel Corporation with 3,000,000 tons and Republic-Trumbull with 1,800,000 tons.

The momentum of the merger movement which has gripped the iron and steel industry of northern Ohio in recent weeks is not yet spent. Final approval of the Youngstown-Inland and Republic-Trumbull deals is taken for granted, while the amalgamation of six independent sheet mills into the Empire Steel Corporation is now fact. Because the Mather and Eaton interests of Cleveland have large holdings in Central Alloy Steel Corporation, Massillon, Ohio, as well as in Youngstown and Inland, rumor persists that this producer will eventually become the alloy steel division of Youngstown-Inland.

The Corrigan, McKinney Steel Co., Cleveland, has figured in the picture since the death of James W. Corrigan, its president, January 23, although on the election of John H. Watson, Jr., as his successor, January 31, it was stated that the company would continue as an independent producer and follow the policies of the late Mr. Corrigan. It has been thought that the company's properties would fit well into the United States Steel Corporation, giving that interest steel bar production in proximity to the large Cleveland and Detroit markets. The corporation's policy against buying up competition might not be applicable, inasmuch as the corporation has no competing plant in the Cleveland district. A rumor of lesser credence is that the Otis Steel Co. and Midland Steel Products Co., both of Cleveland, would make a three-cornered merger with Corrigan, McKinney.

Capacity joined in Youngstown and Chicago districts

YOUNGSTOWN SHEET & TUBE CO. AND SUBSIDIARIES

	Campbell works	Brier Hill works	Mayville works	Indiana Harbor works	South Chicago works	Hubbard works	Total
Blast furnaces.....	4	3	2	2	4	2	17
Pig iron capacity.....	1 900,000	1 550,000	275,000	1 468,000	1 810,000	1 325,000	1 3,328,000
By-product ovens.....	2 306	84	108	3 120	-----	-----	4 618
Yearly coke capacity.....	1 1,500,000	1 370,000	300,000	1 648,000	-----	-----	1 2,818,000
Open hearths.....	12	12	-----	4	-----	-----	28
Basic converter.....	2	-----	-----	2	-----	-----	4
Steel ingot bes.....	1 780,000	-----	-----	600,000	-----	-----	1,380,000
Steel ingot O. H.....	840,000	780,000	-----	240,000	-----	-----	1,860,000
Steel ingot total.....	1,620,000	780,000	-----	840,000	-----	-----	3,240,000
Sheet capacity.....	160,400	60,000	-----	1 70,600	-----	-----	291,000
Blk steel pipe.....	600,000	1 72,000	-----	240,000	1 120,000	-----	932,000
Wire products.....	370,000	-----	-----	-----	-----	-----	370,000

¹ Tons.

² Koppers.

³ Semet-Solvay.

⁴ Ovens.

⁵ West Res.

⁶ Evanston.

⁷ Zanesville.

Capacity joined in Youngstown and Chicago districts—Continued

INLAND STEEL CO.

	Indiana Harbor	Chicago Heights	Milwaukee	Yearly capacity
Blast furnaces.....	4			870,000
By-product ovens.....	² 204			900,000
Open hearths.....	26			1,600,000
	⁸ 200,000			
	⁹ 332,000			
Hot rolled products including.....	¹⁰ 200,000			1,320,000
	¹¹ 185,000	45,000		
	¹² 140,000		50,000	

COMBINED CAPACITY BOTH COMPANIES

Blast furnaces	Pig iron	Coke capacity	Ingot capacity	Pipe capacity	Sheets	Tin plate	Plates and skelp	Bars	Wire
21.....	4,198,000	3,718,000	4,840,000	932,000	481,000	115,000	1,570,000	435,000	370,000

² Kopper.⁸ Ton rails.⁹ Structural.¹⁰ Plates.¹¹ Tons bars.¹² Tons sheets.STEEL MERGERS AND STEEL OUTPUT ²

Now that the merger of the Youngstown Sheet & Tube Co. and the Inland Steel Co. is virtually assured and the purchase of the Trumbull Steel Co. by the Republic Iron & Steel Co. has been ratified by stockholders, the grouping of large units of steel production has been carried to a point where 10 companies will control about 82 percent or 47,497,000 tons, out of the 58,000,000 tons per annum of theoretical steel-making capacity in the United States. Five of these companies have total capacity of almost 41,000,000 tons, the smallest of the group being rated at nearly 2,000,000 tons, while in a secondary group are 5 other producers whose totals are between 1,000,000 and 1,750,000 tons each. The ingot capacities of the 10 companies are:

	Tons
United States Steel Corporation.....	22,000,000
Bethlehem Steel Corporation.....	7,000,000
Youngstown-Inland Corporation.....	7,000,000
Jones & Laughlin Steel Corporation.....	3,000,000
Republic-Trumbull Cos.....	1,000,000
American Rolling Mill Co.....	1,000,000
Central Alloy Steel Corporation.....	1,000,000
Wheeling Steel Corporation.....	1,000,000
Colorado Fuel & Iron Co.....	1,000,000
Corrigan, McKinney Steel Co.....	1,000,000
Total.....	47,497,000

If the Youngstown-Inland and Republic-Trumbull properties should be brought together later under one ownership, a possible development toward which there is as yet no definite move, the total ingot capacity of the combination, amounting to 6,990,000 tons, would still be exceeded by the Bethlehem Steel Corporation's rating of 7,900,000 tons.

² The Iron Age, February 2, 1923.

Of a little less than 11,000,000 tons of ingot capacity that is left to all of the steel companies not included in the 10 above listed, there are 13 whose totals range between 300,000 and 1,000,000 tons a year. These are:

	Tons
Crucible Steel Co. of America (including Pittsburgh Crucible Steel Co.)	950, 000
International Harvester Co.	700, 000
Lukens Steel Co.	686, 500
Pittsburgh Steel Co.	600, 000
Weirton Steel Co.	570, 000
Donner Steel Co.	540, 000
Alan Wood Iron & Steel Co.	529, 000
Otis Steel Co.	421, 000
Sharon Steel Hoop Co.	400, 000
Interstate Iron & Steel Co.	375, 000
Granite City Steel Co.	360, 000
Bourne-Fuller Co.	300, 000
Andrews Steel Co.	300, 000
Total	6, 731, 500

While most of these 13 companies make only 1 or 2 products each, instead of the diversified lines in which the larger groups are engaged, they are well distributed geographically and help to preserve a competitive situation which allays any fear of monopolistic tendencies in steel production. Recent industrial history confirms the opinion, before expressed in these columns, that large consolidations of capital and facilities have brought with them a greater degree of responsibility toward the public, including that share which purchases the products of the steel mills.

The smaller manufacturing units in the steel industry, although numerically of importance, own only 6½ percent of the total steel-making capacity. It is in this group, however, that mergers may now be looked for, such as the one recently consummated by six Ohio sheet companies under the name of the Empire Steel Corporation. This company, while having only 185,000 tons of steel-making capacity, has upward of 400,000 tons of finished steel capacity when relying upon other companies for some of its raw product.

In the major steel products—rails, plates, shapes, bars, tubular goods, sheets, and wire rods—the five leading producers under the new line-up will predominate to a degree which is well illustrated by the following table, giving in the first column the collective capacities of the five companies and in the second column the estimated capacities of all plants combined:

	Combined capacity of 5 leading producers (tons)	Estimated capacity of all producers (tons)
Rails	3, 672, 000	4, 529, 500
Plates	5, 119, 000	6, 877, 000
Shapes	3, 784, 000	4, 434, 000
Bars, hoops, bands, etc.	9, 148, 000	18, 048, 100
Tubular goods	3, 646, 000	5, 501, 500
Sheets and tin mill black plate	3, 645, 000	8, 710, 700
Wire rods	2, 886, 000	4, 494, 800

¹ Welded and seamless.

In the Chicago district the Youngstown-Inland combine will have 240,000 tons of rail-making capacity out of a total of 1,373,000 tons; 330,000 tons in plates of a total of 1,566,000 tons; 285,000 tons in shapes of 914,000 tons; 360,000 tons in bars, hoops, bands, etc., of 3,732,000 tons; 265,000 tons in sheets and light plates of 530,500 tons; 312,000 tons in pipe of 738,000 tons. Tubular products lead in the capacity at Youngstown, with 600,000 tons.

The acquisition of the Trumbull Co. will give the Republic Iron & Steel Co. a total of about 650,000 tons in bars, strips, hoops, and bands and 260,000 tons in sheets.

EXHIBIT 11¹

BETHLEHEM STEEL CORPORATION,
Newark, N. J., March 30, 1931.

To the Stockholders:

The board of directors submits herewith the following report of the business and operations of your corporation and its subsidiary companies for the fiscal year ended December 31, 1930, and of the condition of its properties and finances at the close of that year.

The net income of your corporation and its subsidiary companies for the year was \$23,843,406, as compared with \$42,242,980 for the preceding year, equivalent to \$5.26 per share of common stock for 1930 as compared with \$15.50 per share on 2,273,333 shares, the average number of shares outstanding during the preceding year, and \$11.01 per share on the 3,200,000 shares outstanding at the end of that year.

The value of shipments and deliveries by subsidiary companies of your corporation during the year, as represented by gross sales and earnings, was \$258,979, 253 as compared with \$342,516,207 for the preceding year.

The value of orders booked during the year, including \$1,382,741 of orders on the books of Pacific Coast Steel Co. and Southern California Iron & Steel Co. on the date of the acquisition of their properties, aggregated \$241,344,965 as compared with \$369,536,888 for the year 1929. The unfilled orders on December 31, 1930, amounted to \$68,426,595 as compared with \$86,060,883 on December 31, 1929.

Full dividends were paid on the preferred stock during the year, and dividends on the common stock of \$1.50 per share were paid on February 15, May 15, August 15, and November 15, 1930.

The Sparrows Point drydock serial 5 percent gold bonds of your corporation were paid on February 11, 1930, and its secured serial 5 percent gold notes were called for redemption on June 15, 1930. The funded debt of your corporation on December 31, 1930, was \$117,528,600 as compared with \$237,142,264 on December 31, 1924.

Under date of March 12, 1930, an agreement was entered into covering the acquisition by your corporation, directly or through subsidiaries, of all the properties and assets of the Youngstown Sheet & Tube Co. in consideration of the assumption of all liabilities and obligations of Youngstown, including \$72,000,000, principal amount, of its first mortgage sinking fund 5 percent gold bonds, series A, together with \$15,000,000 in cash to be paid to the holders of the preferred shares of Youngstown and one and one-third (1½) shares of the common stock of your corporation for each common share of Youngstown, of which there were approximately 1,200,000 outstanding. The validity of this agreement was attacked by a group of minority stockholders of Youngstown and its consummation was enjoined by the court of common pleas of Mahoning County, Ohio. This decision has been appealed.

The holders of about 292,000 shares of the common stock of Youngstown which had not been voted for the sale have demanded the fair cash value of their shares under the provisions of the Ohio statutes, in lieu of the shares of common stock of your corporation to which they would otherwise be entitled under the terms of the agreement. To the extent that they shall become entitled to receive such fair cash value the number of shares of common stock of your corporation to be delivered will be proportionately reduced.

In October 1930 negotiations were concluded for the acquisition by your corporation of all of the fabricating properties and business of McClintic-Marshall Corporation in consideration of 240,000 shares of common stock and \$8,200,000, principal amount, of 4½ percent serial notes of your corporation with an adjustment of dividends and interest thereon as of October 1, 1930, and the assumption of liabilities of McClintic-Marshall, including \$12,000,000, principal amount, of bonds now outstanding. Title to the properties was transferred on February 10, 1931; 214,159 shares of common stock of your corporation were purchased during the year for this purpose and were delivered as part of such consideration, in addition to 25,841 shares which were available in the treasury. The 4½ percent serial notes are part of an authorized issue of \$25,000,000, principal amount, maturing in 10 equal series annually, commencing January 1, 1932. The properties acquired include fabricating plants located in or near Rankin, Leetsdale, Carnegie, and Pottstown, Pa.; Buffalo, N. Y.; Chicago, Ill.; San Francisco and Los

¹ From Twenty-Sixth Annual Report of Bethlehem Steel Corporation, December 31, 1930.

Angeles, Calif. The acquisition of these properties, fully equipped for the fabrication and construction of steel buildings, bridges, tanks, river barges, pipe lines, etc., represents an important extension of the activities of your corporation.

The cash expenditures for additions and improvements to properties during the year amounted to \$47,158,004. The estimated cost of completing the construction authorized and in progress as of December 31, 1930, is \$14,820,000.

The most important units of the construction work now in progress are: The additional open-hearth department and 40" Universal Slabbing Mill at the Maryland plant and the additional open-hearth department at the Lackawanna plant, all of which were referred to in our previous report; the removal of the 152-inch plate mill from the Coatesville plant to the Maryland plant where it will be increased in size to 160", and installed in lieu of constructing the proposed new 166" sheared plate mill referred to in our previous report; improvements to the by-product equipment of the Lackawanna coke-oven plant and the complete rebuilding of two blast furnaces, one at the Maryland plant and the other at the Lackawanna plant, together with installations of primary gas washers and equipment for cleaning and distributing blast furnace gas.

PROPERTIES OWNED OR LEASED BY SUBSIDIARY COMPANIES

Steel and manufacturing plants

	<i>Gross tons</i>
Pig iron capacity as of January-1, 1931.....	7, 236, 000
Steel capacity as of January 1, 1931.....	8, 610, 000

<i>Plant</i>	<i>Location</i>
Bethlehem plant.....	Bethlehem, Pa.
Cambria plant.....	Johnstown, Pa.
Coatesville plant.....	Coatesville, Pa.
Harlan plant.....	Wilmington, Del.
Lackawanna plant.....	Lackawanna, N. Y.
Lebanon plant.....	Lebanon, Pa.
Los Angeles plant.....	Vernon, Los Angeles, Calif.
Maryland plant.....	Sparrows Point, Md.
Seattle plant.....	Seattle, Wash.
South San Francisco plant.....	South San Francisco, Calif.
Steelton plant.....	Steelton, Pa.

Fabricating works (including McClintic-Marshall Corporation)

<i>Plant</i>	<i>Location</i>
Bethlehem works.....	Bethlehem, Pa.
Buffalo works.....	Buffalo and Lackawanna, N. Y.
Carnegie works.....	Carnegie, Pa.
Central works.....	San Francisco, Calif.
Los Angeles works.....	Los Angeles, Calif.
Morava and Kenwood works.....	Chicago, Ill.
Pottstown works.....	Pottstown, Pa.
Rankin works.....	Rankin, Pa.
Ritter-Conley and Leetsdale works.....	Leetsdale, Pa.
Steelton works.....	Steelton, Pa.

Shipbuilding and ship repair plants

<i>Plant</i>	<i>Location</i>
Baltimore plant.....	Sparrows Point and Baltimore, Md.
Fore River plant.....	Quincy, Mass.
Boston plant.....	Boston, Mass.
Union plant.....	San Francisco and San Pedro, Calif.

Equipment at above properties.—One thousand four hundred and seventy-eight byproduct coke ovens with apparatus for the recovery and rectification of benzol products; 2 sintering departments; 1 calcining department; 32 blast furnaces; 11 bessemer converters; 144 open-hearth furnaces (including 12 under construction); 7 electric furnaces; 11 puddling furnaces; 26 charcoal iron-knobbling furnaces; 13 blooming mills; 3 slabbing mills; 15 billet sheet bar and skelp mills; 3 "Bethlehem" special structural shape mills; 6 standard structural shape mills; 3 universal plate mills; 6 sheared plate mills; 1 universal and sheared plate mill; 3 rail mills; 5 bar and structural shape mills; 30 bar mills; 2 wire rod mills; 2 butt weld pipe

mills; 2 lap weld pipe mills; 1 tube mill; 1 puddle mill; 1 muck bar mill; 2 rolled-steel wheel mills; 48 tin-plate mills with 35 tinning stacks; 12 sheet mills with 4 galvanizing pots; 2 sheet jobbing and light-plate mills; 2 wire drawing, wire finishing and nail departments; 1 cold drawing department; 2 press and hammer forge shops; 1 drop forge department; 1 axle forging department; 2 steel foundries; 6 iron foundries; 8 brass foundries; 1 steel, iron, and brass foundry; 1 ingot mold foundry; 1 roll foundry; 1 roll finishing shop; 1 special treatment plate department; 1 forge specialty and projectile department; 1 steel treatment department; 3 commercial machine shops; 6 ship machine shops; 1 steel and wood freight car department; 1 passenger train car plant; 1 small tool department; 14 structural fabricating shops; 1 tank and plate shop; 1 tower department; 6 ship fabricating shops; 3 ship boiler shops; 2 splice bar and tie plate shops; 2 frog and switch departments; 3 bolt, nut and spike factories; 1 agricultural implement and rail anchor shop; 1 plate flanging and pressing department; 1 brickyard; 27 building ways with cranes; 1 barge building department; 7 graving docks; 10 floating dry docks; 4 marine railways; 6,568 acres of manufacturing site; 7,684 acres of other real estate; 2,829 dwellings, stores, welfare and miscellaneous buildings for employees.

IRON ORE PROPERTIES

Two-thirds interest in Corsica Iron Co., two-thirds interest in Hobart Iron Co., 51 percent interest in Mahoning Ore & Steel Co. (50 percent held under Cambria Iron Co. lease), 45 percent interest in Hoyt Mining Co., and two-ninths interest in Bennett Mining Co., which operate under lease properties in the Mesaba Range.

Full ownership of Sunday Lake Iron Co., two-fifths interest in Plymouth Mining Co., and one-half interest in Odanah Iron Co., which operate under lease properties in the Gogebic Range.

One-half interest in the Negaunee Mine Co., and 51 percent interest in Palmer Mining Co., which operate under lease properties in the Marquette Range.

Full ownership of Penn Iron Mining Co. (held under Cambria Iron Co. lease) and one-half interest in the Verona Mining Co., which operate under lease properties in the Menominee Range.

One-fourth interest in Vermillion Mining Co., which operates under lease properties in the Vermillion Range.

Three-fifths interest in Cuyuna Ore Co., which operates properties under lease and three-fifths interest in Lehigh Ore Co. which has an interest in a mining company operating properties under lease in the Cuyuna Range.

The share interest in the above-mentioned properties makes available approximately 7,375,000 tons of iron ore per annum.

Ore mines located in Cornwall Borough, Pa., and concentrating and sintering plant in Lebanon, Pa., equipped to produce 750,000 tons sintered ore per annum.

Tofo iron ore mines located near Cruz Grande in province of Coquimbo, Chile, operated under long-term lease and equipped to produce 1,500,000 tons of iron ore per annum.

Undeveloped property located in the state of Michoacan, Republic of Mexico.

Property located near Santiago on south coast of Cuba equipped to produce 300,000 tons of iron ore per annum.

Property and mineral rights located near Nipe Bay, on north coast of Cuba, equipped to produce 500,000 tons of nodules per annum.

The iron ore properties referred to (excluding those on the north coast of Cuba and in Mexico and excluding interest of others in properties not owned outright) are estimated to contain 172,013,000 tons of iron ore.

COAL PROPERTIES

Developed coal properties in the vicinity of Ellsworth, Heilwood, Johnston, Marianna and Slickville, Pa.; Fairmont and Morgantown, W. Va.

These properties are estimated to contain 701,788,000 tons of coal and are equipped to produce 12,030,000 tons per annum.

Limestone properties

Quarries located at Bethlehem, Bridgeport, Hanover, Lebanon, Naginay, Steelton, and York, Pa.; McAfee, N. J.; and undeveloped properties in Blair and Center Counties, Pa.; Pekin, N. Y.; and Felton, Cuba. The developed properties are estimated to contain 133,192,000 tons of calcite and dolomite limestone and are equipped to produce 2,045,000 tons per annum for consumption at the steel plants and 425,000 tons for building and road purposes.

Railroads

Seven railroad companies operating in the vicinity of plants located at Bethlehem, Johnstown, Lebanon, and Steelton, Pa.; Lackawanna, N. Y.; Sparrows Point, Md.; and Quincy, Mass.

These railroads own and operate 139 standard gage steam locomotives, 1 electric locomotive, 194 70-ton standard gage cars and approximately 382 miles of main line, yard tracks and sidings, connecting with other common carrier railroads.

In addition to the above, 14 standard gage locomotives and 176 miles of main line, yard track and sidings are owned and operated in conjunction with the steel plants.

Ocean transportation

Five ore and coal carrying vessels of 20,000 d. w. t. capacity each; 2 ore carrying vessels of 11,600 d. w. t. capacity each, 1 ore and coal vessel of 6,000 d. w. t. capacity, and 13 general cargo carrying vessels of 111,695 total d. w. t. capacity; and under charter 2 ore and coal carrying vessels of 20,000 d. w. t. capacity each.

Lake transportation

Eight vessels with a total carrying capacity per trip of 82,000 gross tons, and 50 percent interest in three and 62 percent interest in two additional vessels with a total carrying capacity per trip of 48,200 gross tons, and under charter 3 vessels with a carrying capacity per trip of 38,000 gross tons. These vessels have a total carrying capacity per season of approximately 3,900,000 gross tons of iron ore, and are also suitable for carrying coal, limestone and grain; also under charter 2 vessels with a total carrying capacity per season of 135,000 gross tons of steel and iron products which are also suitable for carrying return cargoes of scrap.

PRODUCTS

Agricultural steel and specialties: Standard and special shapes and sections for all purposes; semifinished agricultural implement parts.

Armor plate.

Automobile steel: For forgings and machined parts, wheel rim sections, springs, axles and brake drums.

Automobile tire moulds and rings, rolled steel.

Auxiliary locomotives: Four and six-wheel designs.

Axles: Passenger and freight train car, engine and tender truck, driving, motor, and electric and mine locomotive and car.

Bars, iron: Chain, staybolt, special staybolt, enginebolt, and muck bar.

Bars and bands, steel: Bessemer, open hearth and electric; alloy, special, and carbon steels; black as rolled, annealed, heat treated, cold drawn; Society of Automotive Engineers specifications and special analysis, suitable for all purposes. Special sections, hot rolled or cold drawn.

Bars, concrete reinforcing steel: Plain, twisted, deformed, bent, and placed.

Bars, rail steel: Plain, deformed, and angles.

Billets, blooms, and slabs, steel: Bessemer open hearth and electric; alloy, special, and carbon steels; rerolling and forging quality.

Blanks, rolled: For gears, pistons, fly wheels, double flanged track wheels, sheaves, turbines, shaft couplings, pipe flanges, brake drums, and other circular forgings.

Boilers: "Bethlehem" Marine, Scotch and Yarrow types.

Boiler heads: Flanged and dished.

Boiler tubes, lap welded: Genuine knott'd charcoal iron, and steel.

Bolts: All kinds: plain and galvanized; machine and special; plain and heat treated: carbon, alloy, and "Mayari"; steel frog, track, and fitting-up bolts; hollow and solid stay bolts. Rivets, steel and iron—boiler, structural, and ship. Rods—tie, silo, radiator, structural, and pulley. Pipe bands.

Bridges, buildings and other structures: Designs for and fabrication and erection of all types of fabricated steel bridges and buildings, tanks, pipe lines, subways, towers, oil refinery plants, blast furnace stacks and stoves, steel frame houses, pier caissons, buckle plates, display signs and miscellaneous structures.

Byproducts: Coke oven gas, tar, ammonium sulfate, crude naphthalene, benzol and its homologues, cyanogen sludge; copper and sulfur concentrates.

Car building shapes: Beams, channels, angles, bulb angles, center sills, and Z-bars.

Cars, mine: All types.

Cars, passenger train: Passenger, baggage, express, mail, combination passenger and baggage, baggage and mail and other combinations, gas-electric, private, and special cars.

Cars, freight: Ballast, gondola, hopper, flat, tank and box; underframes and trucks; forged, pressed, and fabricated car parts.

Car wheels, wrought steel: For freight and passenger cars; engine and tender trucks; street, interurban, elevated, and subway cars; mine locomotives and cars; cinder, ore, and other industrial cars.

Castings: Carbon and alloy steel (open hearth and electric), manganese steel, stainless-clad steel, iron, brass, and bronze; rough as cast or machined, tunnel segments, iron and steel. Centrifugal cast bronze sleeves and liners.

Coke: Furnace, foundry, and domestic.

Drop forgings and upsetter forgings: Special designs, large and small sizes, in carbon and alloy open hearth and electric high speed and stainless steels; copper, brass, bronze, and Monel metal. Annealed or heat treated if desired.

Engines: Steam, marine type, gas, and "Bethlehem" large unit oil.

Fencing: "Cambria" woven wire fence for field, poultry, and all other purposes; fence posts.

Ferromanganese.

Forgings: Hydraulically pressed and hammered, all sizes; carbon and alloy steels; solid and hollow; rough and finish machined; for marine and stationary engines, turbines, generators, machine tools; ship shafting; hardened steel rolls; weldless chambers for oil refineries; tool joints for drills, seamless penstocks; high pressure seamless boiler drums and chemical vessels; cylinders for aircraft engines, and other types of punched and drawn forgings.

Frogs and switches: Frogs, switches, guard rails, crossings, switch stands, steam and street railway special work. Manganese steel track work of every description. Light rail track work for mines and industrial plants.

Fuel oil burning systems: "Bethlehem-Dahl" mechanical type, for marine and land service.

Gears and pinions: Cut and cast bevel; spur, with straight or herringbone cut teeth, any size; mill reduction gearing and pinions; for bridge operating machinery.

Ingot molds, stools, and bottom plates: All sizes.

Joists: "Bethlehem" joists and "MacMar" welded joists.

Machinery: Hydraulic presses, pumps, accumulators, intensifiers, plate bending rolls, rolling mill machinery, heavy duty roll, lathes, vulcanizing plates and presses, mechanical doublers, retorts, special machinery of all types and designs.

Mine ties: Steel.

Nails, wire: All kinds; standard and special sizes; galvanized, cement coated, annealed, blued, and bright; spikes; wire staples for fence and netting.

Nuts: Hot and cold pressed; all sizes, shapes, and standards; blank or tapped, cold punched, chamfered, trimmed, and reamed; semifinished; castle; "Bethlehem" treated.

Oil refinery plants.

Oil separators: Marine type; for separating oil from bilge and ballast water.

Oil well derricks and equipment.

Ore, chrome.

Ordnance: Projectiles; gun and shell forgings.

Paraffin wax plant equipment.

Pig iron: Basic, Bessemer, semi-Bessemer, foundry, low phosphorus, malleable, malleable Bessemer, "Mayari" and "Silver Mayari."

Piling: "Lackawanna" steel sheet piling; straight, arched, deep-arched, and bent webs; fabricated corner, and taper piles.

Pipe, steel: Standard, butt and lap-welded, and line pipe; black, galvanized, and special rust resisting; copper bearing. Riveted, electric welded, and lockbar pipe.

Pipe couplings: Forged.

Plates: Universal and sheared, in all grades for all purposes; flanged and dished heads; miscellaneous pressed plate work.

Plate work: Steel plate construction of all kinds; gas holders, oil and water tanks, barges, blast furnace stacks and stoves, metal mixers, hot metal ladles, stacks, pipe, etc.

Pole line material: Black and galvanized.

Propellers: Propellers and contra propellers for all type vessels.

Rails and accessories: Standard tee, girder, guard, high tee, and light rails; splice bars, rail joints, tie plates, bolts, nuts, rail clips, spikes, and rail anchors.

Reinforcing bars: Plain rounds and squares, twisted, deformed; bent and placed.
 Rivets, steel, and iron: Boiler, structural, and ship.
 Rods, wire: Basic, acid open hearth, and Bessemer. Patented spring rods.
 Rolls: Carbon and alloy steel; chilled and sand cast iron. Hardened steel rolls.
 Shafts, forged: All kinds.
 Sheet bars: Open hearth and Bessemer.
 Sheets—black, blue annealed and galvanized: Formed roofing and siding products; rust-resisting copper steel sheets.
 Shipbuilding shapes: Ship channels and bulb angles.
 Skelp: Universal and sheared.
 Spiegeleisen.
 Spikes: Standard railroad, screw track, universal screw, tie plate screw, boat, dock and wharf.
 Stone: Limestone and limestone sand for concrete and road work.
 Structural shapes: "Bethlehem" beams, girder beams, and columns, "Bethlehem" joists and stanchions; standard and bar-size beams, channels, and angles; car and shipbuilding shapes; standard and special T and Z bars; rolled steel slabs for column bases and column covers.
 Sucker rods: Box and pin type; double pin type with coupling; pull rods with turtle backs; sub polished and pony rods.
 Ties, steel cross: Railroad, industrial, and mine.
 Tin plate: Coke tin plate; black plate; special lithographing, galvanizing, and enameling stock.
 Tool steel: "Bethlehem" special high speed; "Comokut" super high speed; carbon; finishing; nonshrinkable; stainless; rock and mine drill, solid and hollow; 35 percent nickel; "Cobaflex" magnet; "Bethalon" free machining, non-rusting screw stock; and other special grades.
 Tools: Punches and dies, chisel blanks and chisels, hot and cold friction saws, rivet sets, steel stamps (letters and figures for hot and cold work), slitting shears, shear blades, tool bit holders, and special tools.
 Towers: Fabricated structural steel for power transmission lines and bus structures, etc.
 Track work, mine and industrial: Light rails, steel mine ties, frogs and switches, switch stands, rail braces, splice bars, track bolts, and spikes.
 Tubing, rail steel: Structural, fence, and guard rail.
 Turbines: "Bethlehem" geared marine, Curtis and Parsons types.
 Turntables, railroad: "Bethlehem" twin-span and balanced.
 Vessels: Passenger combination passenger and cargo ships, oil tankers, freighters, refrigerating ships, car floats, ferryboats, yachts, tugs, barges, dredges; battleships, battle cruisers, scout cruisers, destroyers, and submarines.
 Vessel repairs: Repairing, reconditioning, converting, and dry docking, all types and sizes.
 Wheels, wrought steel: For cars, locomotives, and industrial equipment.
 Wire: Plain, bolt, screw, extra soft rivet, chain, hard bright nail galvanized, an telephone; "Cambria" barbed twisted and all styles of barbed wire; spring wire; wire bale ties, wire nails, and wire fencing. Wire rods.

Subsidiary companies

Name	Incorporated	
	State	Date
Bethlehem Chile Iron Mines Co.	Delaware	Jan. 13, 1913
Bethlehem-Cuba Iron Mines Co.	West Virginia	June 29, 1889
Bethlehem Iron & Steel Corporation	New York	Apr. 22, 1908
Bethlehem Land & Improvement Corporation	do.	Apr. 20, 1923
Bethlehem Mines Corporation	Delaware	Nov. 23, 1917
Bethlehem Securities Co.	Pennsylvania	June 28, 1916
Bethlehem Shipbuilding Corporation, Ltd.	Delaware	Oct. 15, 1917
Bethlehem Steel Co.	Pennsylvania	Apr. 17, 1899
Do.	Delaware	Feb. 6, 1923
Bethlehem Steel Co. of Brazil	do.	Apr. 8, 1920
Bethlehem Steel Export Corporation	do.	Sept. 22, 1922
Bethlehem Steel Products Co.	Pennsylvania	Oct. 8, 1908
Bethlehem Steel Realty Corporation	do.	Jan. 31, 1907
Bethlehem Transportation Corporation	Delaware	Feb. 19, 1925
Beth-Mary Steel Corporation	Maryland	Dec. 22, 1921
Buena Vista Iron Co.	New Jersey	Feb. 2, 1910
Bullington Water Co.	Pennsylvania	Dec. 28, 1900

Subsidiary companies—Continued

Name	Incorporated	
	State	Date
Calmar Steamship Corporation.....	Delaware	July 29, 1927
Cambria Inclined Plane Co.....	Pennsylvania	Sept. 6, 1889
Cambria Iron Co. ¹	do	Aug. 27, 1882
Compañia de Minas de Hierro "Las Truchas" S. A.....	Mexico	Jan. 20, 1919
Conemaugh & Black Lick Railroad Co.....	Pennsylvania	Dec. 31, 1923
Cornwall Railroad Co.....	do	May 25, 1880
Dundalk Co., The.....	Maryland	May 5, 1917
Dundalk Sewerage Co., The.....	do	Apr. 22, 1918
Dundalk Water Co., The.....	do	Do.
East Wheatfield Water Co.....	Pennsylvania	Dec. 28, 1900
Ellsworth Collieries Co.....	do	Oct. 13, 1925
Fore River Railroad Corporation.....	Massachusetts	Jan. 6, 1919
Fore River Shipbuilding Corporation.....	do	May 15, 1913
Franklin Iron Co., The.....	New Jersey	Mar. 14, 1871
Juragua Iron Co.....	Pennsylvania	Nov. 18, 1903
Kenilworth Land Co.....	do	Nov. 14, 1917
Lebanon Consolidated Water Co.....	do	Feb. 6, 1925
Lebanon County Light, Heat & Fuel Co., The.....	do	Dec. 27, 1904
Manufacturers Water Co., The.....	do	Feb. 19, 1900
McClintic-Marshall Corporation ¹	do	Dec. 14, 1880
Northampton County Water Co.....	do	Jan. 6, 1916
Ore Steamship Corporation.....	Delaware	Aug. 2, 1915
Pacific Coast Steel Corporation.....	do	July 1, 1919
Patapasco & Back Rivers Railroad Co.....	Maryland	Dec. 26, 1916
Penn Iron Mining Co.....	Michigan	June 26, 1882
Penn Iron Mining Co. of Wisconsin.....	Wisconsin	Feb. 9, 1915
Penn Store Co.....	Michigan	Mar. 31, 1902
Philadelphia, Bethlehem & New England Railroad Co.....	Pennsylvania	Apr. 12, 1910
Pine Township Water Co.....	do	Feb. 10, 1903
Possum Glory Water Co.....	do	Do.
Service Stores Corporation.....	do	Nov. 15, 1904
South Buffalo Railway Co.....	New York	Apr. 25, 1899
Steel Frame House Co.....	Delaware	May 16, 1930
Do.....	Pennsylvania	Sept. 15, 1927
Steel Frame House Finance Co.....	Delaware	Sept. 13, 1929
Steelton & Highspire Railroad Co.....	Pennsylvania	Nov. 16, 1916
Sunday Lake Iron Co., The.....	Michigan	Feb. 28, 1900
Union Iron Works Co.....	New Jersey	Jan. 7, 1905
Union Iron Works Dry Dock Co.....	California	Feb. 1, 1909

¹ The \$8, 465, 625 capital stock is outstanding in hands of the public. Bethlehem Steel Products Co. has agreed to pay an amount equal to 4 percent per annum thereon as rental for property held under 999-year lease.

² Name changed from the Midvale Steel Co.

EXHIBIT 12

BETHLEHEM STEEL CORPORATION¹

History and properties.—Incorporated Dec. 10, 1904, in New Jersey, under perpetual charter; successor to the United States Shipbuilding Co., under the modified reorganization plan described in the manual for 1904, page 1612. The corporation acquired the entire capital stock (except directors' qualifying shares) of the following companies: Bethlehem Steel Co., Harlan & Hollingsworth Corporation, Union Iron Works Co. of San Francisco, Samuel L. Moore & Sons Corporation, Carteret Improvement Co., Eastern Shipbuilding Corporation, Crescent Shipyard Corporation, Bath Iron Works Co., and Hyde Windlass Co.

The plants of the Bath Iron Works Co. and the Hyde Windlass Co. were disposed of early in 1905. During 1905 small portions of the property of the Harlan & Hollingsworth Corporation, and the Samuel L. Moore & Sons Corporation, not essential to the operation of the plants, were sold. The plant of the Crescent Shipyard Corporation at Elizabethport, N. J., and the plant of the Carteret Improvement Co. at Carteret, N. J., were consolidated with Samuel L. Moore & Sons Corporation on Nov. 21, 1907. The plant of the Eastern Shipbuilding Corporation was sold to Charles R. Hanscom, representing a syndicate, in September 1907.

The entire property of the San Francisco Dry Dock Co. was purchased in November 1908, by the Union Iron Works Dry Dock Co., then a subsidiary

¹ Poor Industrials, 1934.

company of the Union Iron Works Co., now a subsidiary of the Bethlehem Steel Corporation.

During 1913 the plants and properties of Fore River Shipbuilding Co., Quincy, Mass., and of the Titusville Forge Co., Titusville, Pa., were purchased, respectively, by Fore River Shipbuilding Corporation, and Titusville Forge Co., the latter companies being then subsidiary companies of the Bethlehem Steel Co. organized for the purpose of taking over those properties. The Titusville Forge Co. (see manual for 1916, p. 3968, or apply to our information department) was dissolved in 1916 and its plant taken over for direct operation by Bethlehem Steel Co.; in January 1920, it was sold and acquired by a new company known as Titusville Forge Co.—see General Index.

On Aug. 17, 1915, the Bethlehem Steel Co. acquired the plant of the Detrick & Harvey Machine Co. of Baltimore City, through purchase of its entire capital stock. This company was subsequently dissolved and its assets transferred to and liabilities assumed by Bethlehem Steel Co. In 1925 the properties were sold to a new company known as the Detrick & Harvey Machine Co.

In February 1916, the plant and properties of the United Engineering Works at Alameda, were acquired through purchase by the Union Iron Works Co.

In February 1916, the Bethlehem Steel Co., directly or through the Penn-Mary Steel Co., acquired all the assets and assumed the liabilities of Pennsylvania Steel Co. (of Pennsylvania) (see manual for 1916, pp. 3965-3968, or apply to our information department), and Maryland Steel Co., and all the assets of Pennsylvania Steel Co. (of New Jersey), except the stock of the said Pennsylvania Steel Co. (of Pennsylvania), and Maryland Steel Co., for \$31,941,630 (which was at the rate of par for the preferred and about \$31 per share for the common, subject to existing liens except the \$8,500,000 bonds of Pennsylvania Steel Co. (of New Jersey) which were retired out of the proceeds of this sale. The liens, subject to which the properties were purchased, aggregated approximately \$17,300,000, all of which has since been paid. The purchase price was paid in 5 percent 20-year purchase money bonds secured by mortgage upon the plants acquired.

In May 1916, the Bethlehem Steel Co. acquired the Baltimore Sheet & Tin Plate Co. (see manual for 1916, p. 3967, or apply to our information department), by the purchase of all its assets at price sufficient to pay at the rate of par for the preferred stock on the dissolution of the latter company.

Near the close of the year 1916, Penn-Mary Steel Co. acquired the property and plants of the American Iron & Steel Manufacturing Co. (see Manual for 1916, p. 3967, or apply to our information department) at Lebanon, Pa., and Reading, Pa. The purchase price of these properties was \$6,660,000 in bonds of the Penn-Mary Steel Co., secured by a mortgage upon the real estate and plants acquired, and guaranteed by the Bethlehem Steel Co. For description of these bonds see a subsequent page.

At about the same time Bethlehem Steel Co. acquired from the Lackawanna Steel Co. the properties and plants of the Lackawanna Iron & Steel Co. at Lebanon, Pa., consisting of two blast furnaces and a byproducts coke plant at Lebanon, an interest in the Cornwall Ore Banks Co., and a lease of three additional blast furnaces at Lebanon and Cornwall, Pa., and of the Cornwall Railroad.

In February 1917 Bethlehem Steel Co. purchased all of the capital stock of the Lehigh Coke Co. (see manual for 1916, p. 2934, or apply to our information department). The purchase price of this property and plant was payable in purchase money bonds secured by the properties and plant acquired. All the property and business of the Lehigh Coke Co. were acquired on April 20, 1917, by the Eastern Coke Co., a subsidiary of the Bethlehem Steel Co. In July 1918, the Eastern Coke Co. and Penn-Mary Steel Co. were dissolved and their assets transferred to and liabilities assumed by the Bethlehem Steel Co.

On October 23, 1919, announcement was made of the purchase by the Penn-Mary Coal Co. of the Elkins Coal & Coke Co. (see 1919 Industrial Manual, p. 2438, or apply to our information department); this property consisted of 46,224 acres of coal lands in West Virginia with coal reserves estimated at more than 150,000,000 tons. The Penn-Mary Coal Co. has since been dissolved and its West Virginia properties transferred to Bethlehem Mines Corporation. On April 17, 1920, part of the bituminous coal properties of the Jamison Coal & Coke Co. (see General Index) was acquired by the Finch Run Coal Co. (which has since been merged into Bethlehem Mines Corporation), a subsidiary of the Bethlehem Steel Co., subject to an issue of \$176,000 (as of Dec. 31, 1932) Dakota Sinking Fund 5's described below; the latter properties consisted of about 7,000 acres of coal lands containing 65,000,000 tons of coal located in Marion County, W. Va.

In 1921 Bethlehem Shipbuilding Corporation, Ltd., purchased the shipbuilding and ship repair plants and properties of Baltimore Dry Docks and Shipbuilding

Co. located at Baltimore and in part payment therefor issued its 5½ percent purchase money mortgage bonds guaranteed by Bethlehem Steel Co. and secured by the properties acquired.

In 1922 Bethlehem Iron & Steel Corporation purchased all of the properties and assets of Lackawanna Steel Co. in consideration of the assumption of the liabilities and obligations of Lackawanna and the delivery of \$12,500,000, par amount, of 7 percent noncumulative preferred stock and \$22,608,500 par amount, of the class "B" common stock of the Bethlehem Steel Corporation and \$473,509.45 in cash. This purchase and the increase of capital stock of the corporation required therefor, were approved by the stockholders on September 18, 1922, and the properties were transferred on October 10, 1922. There were thus added to the Bethlehem properties important raw-material properties and a large steel plant at Lackawanna, near Buffalo, having a steel-ingot capacity of 1,840,000 gross tons per annum, well located for assembling raw materials and manufacturing and distributing its products to the important markets in the Middle West and Canada.

Under date of November 24, 1922, agreements were entered into covering the purchase by the Bethlehem Steel Corporation directly or through subsidiaries, of all properties of the Midvale Steel & Ordnance Co. (except the ordnance plant and other business located at Nicetown, Pa., and certain assets appurtenant thereto and the stock owned by it in the Cambria Steel Co.) and all the properties and assets of the Cambria Steel Co. The properties were transferred March 30, 1923. Under the terms of purchase, all liabilities and obligations of the Midvale and Cambria companies (except certain thereof related to the operation of the Nicetown plant), including the 20-year convertible sinking-fund gold 5's of the Midvale Co., were assumed by one or more of the subsidiaries of the corporation and said bonds were guaranteed by the corporation. In addition thereto, the corporation issued in payment for the properties purchased \$97,681,400, par value, of its common stock. Of such common stock, \$95,000,000 was received by the Midvale Co. on the consummation of the transaction for distribution to its stockholders and the balance thereof, namely, \$2,681,400 was distributed by the Cambria Co. among the holders of its stock not then held by the Midvale Co. The corporation also agreed to issue its common stock against the surrender and cancelation of said bonds on the basis of \$500 par value of said stock for each \$1,000 bond.

In December 1924, Bethlehem Shipbuilding Corporation, Ltd., purchased the ship repair plant at Los Angeles, Calif. which it had been operating under lease since 1921, and in part payment therefor issued \$900,000, par amount of its purchase money mortgage 6-percent 15-year sinking fund gold bonds dated January 1, 1925.

On July 6, 1928, Bethlehem Shipbuilding Corporation, Ltd., purchased the plant of the Atlantic Works (see 1928 Manual, p. 686), Boston, Mass., and in part payment therefor assumed \$422,500 first mortgage 6-percent sinking fund gold bonds, which were redeemed January 2, 1930.

In January 1930, all of the properties and business of Pacific Coast Steel Co. and Southern California Iron & Steel Co. (for last published statements see Manual for 1929, p. 706) were acquired by Pacific Coast Steel Corporation, a Bethlehem subsidiary, which now operates the plants, and in addition to selling the products thereof, sells the full line of products manufactured at Bethlehem's eastern plants.

In February 1931, acquired all fabricating properties and business of McClintic-Marshall Corporation and assumed all liabilities of McClintic-Marshall Corporation, including \$12,000,000 (\$7,999,000 outstanding December 31, 1933) of outstanding bonds. Properties acquired are equipped for the fabrication and construction of steel buildings, bridges, tanks, river barges, pipe lines, etc. Consideration was 240,000 shares common stock and \$8,200,000 4½-percent serial bonds of Bethlehem Steel Corporation.

During 1931 purchased the properties and assets of Levering & Garrigues Co., Hay Foundry & Iron Works, and Hedden Iron Construction Co., which owned structural steel fabricating plants in or near Newark, N. J., and of Kalman Steel Co. (see 1931 Manual, p. 2943) fabricators and distributors of concrete bars and building specialties. These purchases involved the issue of an additional \$5,500,000 of Bethlehem Steel Corporation 4½-percent serial gold bonds and the assumption by Bethlehem Iron & Steel Corporation, subsidiary company, of \$240,000 (outstanding December 31, 1933, \$114,600) of Kalman Steel Co. first mortgage 6-percent gold bonds.

During 1932 purchased the property and assets of Seneca Iron & Steel Co., which owned a plant for the manufacture of steel sheets, located at Blasdel, N. Y., near the Lackawanna plant. In consideration therefor Bethlehem assumed

all the liabilities of Seneca, and also delivered 5,000 shares of its preferred stock and 10,000 shares of its common stock.

Bethlehem Steel Corporation has approximately a 22-percent interest in the common stock of Witherbee, Sherman & Co. (see General Index).

PROPERTIES OWNED OR LEASED BY SUBSIDIARY COMPANIES

Steel and manufacturing plants

	Gross tons
Pig iron capacity as of Jan. 1, 1934.....	6, 375, 000
Steel capacity as of Jan. 1, 1934.....	9, 360, 000
Plant	Location
Bethlehem plant.....	Bethlehem, Pa.
Cambria plant.....	Johnstown, Pa.
Coatesville plant.....	Coatesville, Pa.
Harlan plant.....	Wilmington, Del.
Kalman plant.....	Blasdel, N. Y.
Lackawanna plant.....	Lackawanna, N. Y.
Lebanon plant.....	Lebanon, Pa.
Los Angeles plant.....	Vernon, Los Angeles, Calif.
Maryland plant.....	Sparrows Point, Md.
Seattle plant.....	Seattle, Wash.
South San Francisco plant.....	South San Francisco, Calif.
Steelton plant.....	Steelton, Pa.

Fabricating works

Bethlehem works.....	Bethlehem, Pa.
Buffalo works.....	Buffalo and Lackawanna, N. Y.
Carnegie works.....	Carnegie, Pa.
San Francisco works.....	San Francisco, Calif.
Los Angeles works.....	Los Angeles, Calif.
Morava and Kenwood works.....	Chicago, Ill.
Pottstown works.....	Pottstown, Pa.
Rankin works.....	Rankin, Pa.
Leetsdale works.....	Leetsdale, Pa.
Steelton works.....	Steelton, Pa.
Garrigues works.....	Dunellen, N. J.
Hedden works.....	Hillside, N. J.
Hay works.....	Newark, N. J.

Shipbuilding and ship repair plants

Baltimore plant.....	Sparrows Point and Baltimore, Md.
Fore River plant.....	Quincy, Mass.
Boston plant.....	Boston, Mass.
Union plant.....	San Francisco and San Pedro, Calif.

Equipment at above properties.—One thousand four hundred and seventy-eight by-product coke ovens with apparatus for the recovery and rectification of benzol products; 1 sintering department; 28 blast furnaces; 11 bessemer converters; 127 open hearth furnaces; 7 electric furnaces; 11 puddling furnaces; 26 charcoal iron knobbling furnaces; 13 blooming mills; 3 slabbing mills; 15 billet, sheet bar, and skelp mills; 3 Bethlehem special structural shape mills; 5 standard structural shape mills; 3 universal plate mills; 4 sheared plate mills; 1 universal and sheared plate mill; 3 rail mills; 5 bar and structural shape mills; 29 bar mills; 2 wire rod mills; 2 butt weld pipe mills; 2 lap weld pipe mills; 1 tube mill; 1 puddle mill; 1 muck bar mill, 2 rolled steel wheel mills; 48 tin plate mills with 36 tinning stacks; 28 sheet mills with 4 galvanizing pots; 2 sheet jobbing and light plate mills; 2 wire drawing, wire finishing and nail departments; 1 cold drawing department; 2 press and hammer forge shops; 1 drop forge department; 1 axle forging department; 2 steel foundries; 7 iron foundries; 8 brass foundries; 1 steel, iron, and brass foundry; 1 ingot mold foundry; 1 roll foundry; 1 rollfinishing shop; 1 special treatment plate department; 1 forge specialty and projectile department; 1 steel treatment department; 3 commercial machine shops; 6 ship machine shops; 1 steel and wood freight car department; 1 passenger train car plant; 1 small tool department; 18 structural fabricating shops; 1 tank and plate shop; 1 tower

department; 6 ship fabricating shops; 2 ship boiler shops; 3 splice bar and tie plate shops; 2 frog and switch departments; 3 bolt, nut, and spike factories; 1 agricultural implement and rail anchor shop; 1 plate flanging and pressing department; 1 wire forming shop; 14 warehouses for steel products, 11 with facilities for fabricating reinforcing bars; 1 welded joist shop; 1 expanded joist and metal door frame shop; 27 building ways with cranes; 1 barge building department; 7 graving docks; 10 floating drydocks; 3 marine railways; 6,387 acres of manufacturing site; 7,852 acres of other real estate; 2,610 dwellings, stores, welfare, and miscellaneous buildings for employees.

Principal products.—Agricultural steel and specialties; armor plate; automobile steel; automobile tire molds and rings, rolled steel; auxiliary locomotives; axles; bars, iron; bars and bands, steel; bars, concrete reinforcing steel; bars, rail steel; billets, blooms, and slabs, steel; blanks, rolled; boilers; boiler tubes, lap welded; bolts; designs for and fabrication and erection of bridges, buildings, and other structures; building specialties; byproducts; cars, mine; cars, passenger train; cars, freight; car wheels, wrought steel; castings; coke; drop forgings and upsetter forgings; engines—steam, marine type; gas engines and "Bethlehem" large unit oil; fencing; ferromanganese; forgings; frogs and switches; fuel-oil burning systems; gears and pinions; ingot molds, stools, and bottom plates; joists; machinery; nails, wire; nuts; oil separators; oil well derricks and equipment; ore, chrome; ordnance; pig iron; piling; pipe, steel; pipe couplings; plates, plate work; pole line material; propellers; rails and accessories; road reinforcement: rivets, steel and iron; rods, wire; rolls; sheet bars; sheets—hot rolled, blue annealed, galvanized, etc.; skelp, universal and sheared spikes; stone; structural shapes; sucker rods; ties, steel, cross; tin plate; tool steel; tools; tube rounds; tubing, rail steel; turbines; turntables, railroad; vessels; vessel repairs; wire and wire shapes.

Iron ore properties

Two-thirds interest in Corsica Iron Co., two-thirds interest in Hobart Iron Co., 51-percent interest in Mahoning Ore & Steel Co. (50 percent held under Cambria Iron Co. lease), 45-percent interest in Hoyt Mining Co., and two-ninths interest in Bennett Mining Co. and one-third interest in Campbell Mining Co., which operate under lease properties in the Mesaba Range.

Full ownership of Sunday Lake Iron Co., two-fifths interest in Plymouth Mining Co., and one-half interest in Odanah Iron Co., which operate under lease properties in the Gogebic Range.

One-half interest in the Negaunee Mine Co., and a 51-percent interest in Palmer Mining Co. which operate under lease properties in the Marquette Range.

Full ownership of Penn Iron Mining Co. (held under Cambria Iron Co. lease) and one-half interest in the Verona Mining Co., which operate under lease properties in the Menominee Range.

One-fourth interest in Vermillion Mining Co. which operates under lease properties in the Vermillion Range.

Three-fifths interest in Cuyuna Ore Co. which operates properties under lease in the Cuyuna Range.

The share interest in the above-mentioned properties makes available approximately 7,230,000 tons of iron ore per annum.

Ore mines located in Cornwall Borough, Pa., and concentrating and sintering plant in Lebanon, Pa., equipped to produce 750,000 tons sintered ore per annum.

Tofo iron ore mines located near Cruz Grande in Province of Coquimbo, Chile, operated under long-term lease and equipped to produce 1,500,000 tons of iron ore per annum.

Undeveloped property located in the State of Michoacan, Mexico.

Undeveloped property located in the State of Bolivia, Republic of Venezuela.

Property located near Santiago on south coast of Cuba equipped to produce 280,000 tons of iron ore per annum.

Property and mineral rights located near Nipe Bay, on north coast of Cuba, equipped to produce 500,000 tons of nodules per annum.

The iron-ore properties referred to (excluding those on the north coast of Cuba and in Mexico and Venezuela and interest of others in properties not owned outright) are estimated to contain 173,062,000 tons of iron ore.

Coal properties

Developed coal properties in the vicinity of Ellsworth, Hailwood, Johnstown, Slickville, and Marianna, Pa.; Morgantown and Fairmont, W. Va.

These properties are estimated to contain 635,554,000 tons of coal and equipped to produce 10,500,000 tons per annum.

Limestone properties

Quarries located at Bethlehem, Bridgeport, Steelton, Hanover, York, and Naginety, Pa., and McAfee, N. J., and undeveloped properties in Center County, Pa.; Felton, Cuba, and Pekin, N. Y. The developed properties are estimated to contain 121,832,000 tons of calcite and dolomite limestone and are equipped to produce 1,940,000 tons per annum for consumption at the steel plants and 720,000 tons for building and road purposes.

Railroads

Seven railroad companies operating in the vicinity of plants located at Bethlehem, Steelton, Johnstown, and Lebanon, Pa.; Sparrows Point, Md.; Lackawanna, N. Y., and Quincy, Mass.

These railroads own and operate 135 standard gage steam locomotives, 2 electric locomotives, 192 70-ton standard gage cars and approximately 342 miles of main line, yard tracks, and sidings, connecting with other common-carrier railroads.

In addition to the above, 10 standard gage locomotives and 203 miles of main line, yard track, and sidings are owned and operated in conjunction with the steel plants.

Ocean transportation

Five ore and coal-carrying vessels of 20,000 d. w. t. capacity each; 2 ore-carrying vessels of 11,600 d. w. t. capacity each, 1 ore and coal vessel of 6,000 d. w. t. capacity, and 13 general-cargo-carrying vessels of 111,695 total d. w. t. capacity and under charter, 2 ore- and coal-carrying vessels of 20,000 d. w. t. each.

Lake transportation

Eight vessels with a total carrying capacity of 82,000 gross tons, and over 51-percent interest in 3, and 62-percent interest in 2 additional vessels with a total carrying capacity of 48,200 gross tons, and under charter 3 vessels with a carrying capacity per trip of 38,000 gross tons. These vessels have a total carrying capacity per season of approximately 3,900,000 gross tons of iron ore, and are also suitable for carrying coal, limestone, and grain.

Subsidiary companies

Name	Incorporated	
	State	Date
Bethlehem Chile Iron Mines Co.	Delaware	Jan. 18, 1913
Bethlehem-Cuba Iron Mines Co.	West Virginia	June 29, 1889
Bethlehem Iron & Steel Corporation	New York	Apr. 22, 1908
Bethlehem Land & Improvement Corporation	do	Apr. 20, 1923
Bethlehem Mines Corporation	Delaware	Nov. 23, 1917
Bethlehem Securities Co.	Pennsylvania	June 28, 1916
Bethlehem Shipbuilding Corporation, Ltd.	Delaware	Oct. 15, 1917
Bethlehem Steel Co.	Pennsylvania	Apr. 17, 1899
Do	Delaware	Feb. 6, 1923
Bethlehem Steel Co. of Brazil	do	Apr. 8, 1920
Bethlehem Steel Export Corporation	do	Sept. 22, 1922
Bethlehem Steel Products Co.	Pennsylvania	Oct. 8, 1908
Bethlehem Steel Realty Corporation	do	Jan. 31, 1907
Bethlehem Transportation Corporation	Delaware	Feb. 19, 1925
Beth-Mary Steel Corporation	Maryland	Dec. 22, 1921
Buena Vista Iron Co.	New Jersey	Feb. 2, 1910
Buffington Water Co.	Pennsylvania	Dec. 28, 1900
Cahnar Steamship Corporation	Delaware	July 29, 1927
Cambria Inclined Plane Co.	Pennsylvania	Sept. 6, 1889
Cambria Iron Co. ¹	do	Aug. 27, 1852
Compania de Minas de Hierro "Las Truchas" S. A.	Mexico	Jan. 25, 1919
Conemaugh & Black Lick R. R. Co.	Pennsylvania	Dec. 31, 1923
Conemaugh & Franklin Water Co. ²	do	May 16, 1893
Cornwall R. R. Co.	do	May 25, 1850
Dundalk Co., The	Maryland	May 5, 1917
Dundalk Sewerage Co., The	do	Apr. 22, 1918
Dundalk Water Co., The	do	DO.
East Wheatfield Water Co.	Pennsylvania	Dec. 28, 1900
Ellsworth Collieries Co.	do	Oct. 13, 1925

¹ The \$8,465,625 capital stock is outstanding in hands of the public. Bethlehem Steel Products Co. has agreed to pay an amount equal to 4 percent per annum thereon as rental for property held under 999-year lease.

² Subsidiary of Johnstown Water Corporation;

Subsidiary companies—Continued

Name	Incorporated	
	State	Date
Fore River R. R. Corporation.....	Massachusetts.....	Jan. 6, 1919
Fore River Shipbuilding Corporation.....	do.....	May 15, 1913
Franklin Iron Co., The.....	New Jersey.....	Mar. 14, 1871
Iron Mines Co. of Venezuela.....	Delaware.....	Aug. 10, 1933
Johnstown Water Co. ³	Pennsylvania.....	Apr. 11, 1866
Johnstown Water Corporation ⁴	Delaware.....	Apr. 19, 1928
Juragua Iron Co.....	Pennsylvania.....	Nov. 18, 1903
Kalman Steel Corporation.....	Delaware.....	July 20, 1931
Lebanon Consolidated Water Co.....	Pennsylvania.....	Feb. 6, 1925
Lebanon County Light, Heat & Fuel Co., The.....	do.....	Dec. 27, 1904
Manufacturers Water Co., The.....	do.....	Feb. 19, 1900
McClintic-Marshall Corporation.....	do.....	Dec. 14, 1880
Northampton County Water Co.....	do.....	Jan. 6, 1916
Ore Steamship Corporation.....	Delaware.....	Aug. 2, 1915
Pacific Coast Steel Corporation.....	do.....	July 1, 1919
Patapsco & Black Rivers R. R. Co.....	Maryland.....	Dec. 26, 1916
Penn Iron Mining Co.....	Michigan.....	June 26, 1882
Penn Iron Mining Co. of Wisconsin.....	Wisconsin.....	Feb. 9, 1915
Philadelphia, Bethlehem & New England R. R. Co.....	Pennsylvania.....	Apr. 12, 1910
Pine Township Water Co.....	do.....	Feb. 10, 1903
Possum Glory Water Co.....	do.....	Do.
Service Stores Corporation.....	do.....	Nov. 15, 1904
Do.....	Michigan.....	Mar. 31, 1902
South Buffalo Ry. Co.....	New York.....	Apr. 25, 1899
Steel Frame House Co.....	Delaware.....	May 16, 1930
Steel Frame House Finance Co.....	do.....	Sept. 13, 1929
Steelton & Highspire R. R. Co.....	Pennsylvania.....	Nov. 16, 1916
Sunday Lake Iron Co., The.....	Michigan.....	Feb. 28, 1900
Union Iron Works Co.....	New Jersey.....	Jan. 7, 1905
Union Iron Works Dry Dock Co.....	California.....	Feb. 1, 1909

³ 98.29 percent interest owned by Johnstown Water Corporation.

⁴ \$1,804,000 6 percent cumulative preferred stock is outstanding in hands of the public.

EXHIBIT 13

GENERAL

The value of shipments and deliveries by your corporation during the year, as represented by gross sales and earnings was \$131,866,111.39 as compared with \$147,794,352.77 for the preceding year. The net income of \$4,605,330.54 for the year compares with \$10,332,804.34 for the preceding year.

Full dividends were paid during the year upon the 8 percent cumulative convertible preferred stock and the 7 percent preferred stocks, and regular quarterly dividends of 1¼ percent were paid upon the common stock and class B common stock.

The value of orders booked during the year, including \$7,525,255 orders on the books of Lackawanna Steel Co. at the date of the acquisition of its properties, aggregated \$149,211,500 as compared with \$52,672,334 for the year 1921. The unfilled orders on December 31, 1922, amounted to \$67,510,007 as compared with \$50,164,619 on December 31, 1921.

During the year \$9,691,000, face amount, of the secured serial 7 percent gold notes were exchanged for consolidated mortgage 30-year sinking-fund 6 percent gold bonds, series A, leaving \$11,767,000, face amount, of notes outstanding on December 31, 1922. Through the recent sale of \$25,000,000, face amount, of consolidated mortgage 30-year sinking-fund 5½-percent gold bonds, series B, provision has been made to pay at maturity, July 15, 1923, any notes not so exchanged, and also to pay \$10,862,000, face amount, of first mortgage bonds of Lackawanna Steel Co. maturing April 1, 1923, which were assumed in connection with the Lackawanna purchase.

Your corporation, through one of its subsidiaries, Bethlehem Iron & Steel Corporation, purchased during the year all of the properties and assets of Lackawanna Steel Co., in consideration of the assumption of the liabilities and obligations of Lackawanna and the delivery of \$12,500,000, par amount, of 7 percent noncumulative preferred stock and \$22,608,500, par amount, of the class B common stock of your corporation and \$473,509.45 in cash. This purchase, and the

increase of capital stock of your corporation required therefor, were approved at the special meeting of the stockholders of your corporation held September 18, 1922, and the properties were transferred on October 10, 1922. There has thus been added to the Bethlehem properties important raw material properties and a large steel plant at Lackawanna, near Buffalo, having a steel ingot capacity of 1,840,000 gross tons per annum, well located for assembling raw materials, manufacturing and distributing its products to the important markets in the Middle West and Canada. The steel ingot capacity of your corporation is now 4,890,000 gross tons per annum.

At the special meeting above referred to, the stockholders also approved a plan submitted by the board of directors for the simplification of the capital stock structure of your corporation, involving certain amendments to its certificate of incorporation. The plan provided for the creation of a new class of stock known as 7 percent cumulative preferred stock with full voting powers, which, it is expected, eventually will be the only class of preferred stock outstanding. To this end the holders of the 7 percent noncumulative preferred stock were given the privilege of exchanging their stock for the new preferred stock share for share for a limited period, and the holders of the 8 percent cumulative convertible preferred stock were also given the privilege, effective January 1, 1923, of exchanging their stock for the new preferred stock until April 1, 1923, on the basis of \$115, par amount, of the new preferred stock for each share of the 8 percent preferred stock and thereafter, subject to termination of the privilege, on such basis, not exceeding that specified, as shall be fixed by your board of directors.

Provision was also made to confer full voting powers upon the class B common stock (thus eliminating the distinction between it and the common stock) when 80 percent of the largest par amount of the 7 percent noncumulative preferred stock theretofore issued shall have been exchanged in the exercise of the privilege above referred to or otherwise retired. The consummation of this plan will, therefore, result in your corporation having only one class of common stock and one class of preferred stock, each with full voting powers. This simplification in its capital-stock structure will, in the opinion of your board of directors, be advantageous both to your corporation and to its stockholders.

In the exercise of the privilege of exchange thus granted to the holders of the 7 percent noncumulative preferred stock, Lackawanna Steel Co. elected to take \$12,500,000, par amount, of the 7 percent cumulative preferred stock instead of a like amount of the 7 percent noncumulative preferred stock by the contract of purchase agreed to be issued to it, and \$7,959,400, par amount, of the previously issued 7 percent noncumulative preferred stock was also exchanged prior to December 31, 1922, leaving only \$7,040,600, par amount, of the 7 percent noncumulative preferred stock outstanding on that date. Since that date additional exchanges of the 7 percent noncumulative preferred stock have been made, and the holders of a substantial amount of the 8 percent cumulative convertible preferred stock have also exchanged their stock for the new preferred stock.

Under date of November 24, 1922, agreements were entered into covering the purchase by your corporation, directly or through subsidiaries, of all the properties and assets of Midvale Steel & Ordnance Co. (except the plant at Nicetown, Pa. and certain assets appurtenant thereto and the stock owned by it in Cambria Steel Co.) and all the properties and assets of Cambria Steel Co., in consideration of the assumption of all liabilities and obligations of the Midvale and Cambria companies (except certain thereof pertaining to the Nicetown plant), including outstanding 20-year 5-percent convertible sinking-fund gold bonds of the Midvale Co., and the delivery of \$97,681,400, par amount, of the common stock of your corporation. Your corporation has also agreed to issue its common stock against the surrender and cancelation of said bonds on the basis of \$500, par amount, of stock for each \$1,000, face amount of bonds.

The consummation of the proposed Midvale and Cambria purchases which is subject to the approval of the stockholders of the companies interested will, in the opinion of your board, prove exceptionally advantageous to your corporation. Not only will it increase the steel capacity of your corporation to 7,600,000 gross tons of steel ingots per annum, equal to about 15 percent of the steel ingot capacity of this country, but it will add many important lines of products which your corporation does not now manufacture. With the addition of these products your corporation will be a producer of all the important commercial steel products except pipe and seamless tubes. Moreover, the acquisition of very valuable developed iron ore and coal properties included in the purchase, and their operation in conjunction with properties now owned by your corporation will permit of more economical assembling and better mixtures of raw materials, while the unifying of the operations of the manufacturing properties will permit of a more

advantageous allocation of orders. Through these important advantages as well as by a reduction of overhead expense and the elimination of duplications in distributing costs, the position of your corporation in competition with other commercial steel producers will be materially improved.

In order to extend its facilities for ship repair work in the harbor of Boston and to supplement the operations of your Fore River shipbuilding plant, your corporation during the year purchased the plant and property of Simpson's Patent Dry Dock Co., at Boston, the consideration being the assumption of \$318,652.88 of indebtedness and delivery of \$182,000, face amount, of the consolidated mortgage 30-year sinking-fund 6-percent gold bonds, series A, of your corporation. Title to the properties was taken on January 3, 1922.

The first of the five 20,000-ton cargo vessels of your subsidiary, Ore Steamship Corporation, which was completed in February 1922, delivered the first cargo of iron ore from your Chilean mines at New York on June 6, 1922. Two more of these vessels were delivered and put in operation later in the year and the remaining two, it is expected, will be completed and put in operation before June of this year. Contracts were made during the year with Swedish operators under which they have agreed to construct two 20,600-ton cargo vessels to be operated in transporting Chilean ore for your corporation for a term of 20 years at a fixed freight rate. These seven vessels will be able to transport approximately 1,000,000 tons of Chilean ore per annum.

During the year the Consolidated Steel Corporation, through which your corporation conducted its export business, in conjunction with other steel manufacturers, discontinued business and is in process of dissolution, and Bethlehem Steel Export Corporation, a new subsidiary company, was formed to handle the export business of your corporation.

All contracts made with the Emergency Fleet Corporation during the war have been completed, and progress is being made in the adjustment of balances due thereon.

At the beginning of the year the steel plants of your corporation were operated at about 30 percent of capacity, the lowest operating rate for many years past, and selling prices were correspondingly depressed. Commencing in March the rate of production gradually increased until at the end of the year the volume of new business warranted full operations. Selling prices also improved gradually, but at the end of the year were still too low to afford a fair profit. The improvement in prices has continued, and present indications are that your steel plants will operate throughout the current year at the capacity permitted by labor and transportation conditions.

In the shipbuilding industry conditions continued poor throughout the year. There was, however, a fair amount of ship-repair business which increased substantially toward the end of the year. The steel-passenger-coach department of your Harlan plant operated practically at full capacity throughout the year and has a sufficient volume of orders on hand to assure continued full operation for at least another 6 months.

While the subsidiary companies of your corporation have for many years paid pensions to old employees, no definite uniform pension plan was in force. After a careful study of the plans of other corporations, the subsidiary companies of your corporation have formulated and put into operation, effective January 1, 1923, a pension plan making a definite provision for old-age pension based upon the length of service and average compensation of the employee.

On October 26, 1922, Messrs. H. G. Dalton, O. G. Jennings, Moses Taylor, and Alvin Untermeyer were elected directors of your corporation to fill vacancies.

Your board of directors takes pleasure in acknowledging the loyal and efficient services of the officers and employees of your corporation and its subsidiary companies.

By order of the board of directors.

C. M. SCHWAB,
Chairman of the Board of Directors.
E. G. GRACE,
President.

EXHIBIT 14

Full dividends were paid during the year upon the 8-percent cumulative convertible preferred stock and the 7-percent preferred stocks, and regular quarterly dividends of $1\frac{1}{4}$ percent were paid upon the common stocks.

The value of orders booked during the year, including \$25,261,000 of orders on the books of Midvale Steel & Ordnance Co. and Cambria Steel Co. on the date

of the acquisition of their properties, aggregated \$260,968,326 as compared with \$149,211,499 for the year 1922. The unfilled orders on December 31, 1923, amounted to \$53,264,911 as compared with \$67,510,007 on December 31, 1922.

Ten million eight hundred and sixty-two thousand dollars, par amount, of first-mortgage bonds of Lackawanna Steel Co. matured on April 1, 1923, and were paid. During the year \$8,857,000, par amount of the secured serial 7-percent gold notes were exchanged for consolidated mortgage 30-year sinking-fund 6-percent gold bonds, series A, leaving an unconverted balance of \$2,910,000, par amount, of notes which matured on July 15, 1923, and were paid.

The agreements, which were referred to in our previous report, covering the purchase of all the properties and assets of Midvale Steel & Ordnance Co. (except the plant at Nicetown, Pa., and certain assets appurtenant thereto and the stock owned by it in Cambria Steel Co.) and all the properties and assets of Cambria Steel Co., were approved at the special meeting of the stockholders of your corporation held March 12, 1923, and on March 30, 1923, the Midvale properties were transferred to Bethlehem Steel Co. and the Cambria properties to Bethlehem Steel Products Co., subsidiary companies of your corporation. Payment for these properties was made by the delivery of 976,814 shares of the common stock of your corporation and the assumption of all liabilities and obligations of the Midvale and Cambria companies (except certain thereof pertaining to the Nicetown plant), including \$40,906,500, par amount, of Midvale Steel & Ordnance Co. 20-year convertible sinking-fund 5-percent gold bonds, and also the obligation of Cambria Steel Co., under the 999-year lease covering the properties of Cambria Iron Co., to pay an amount equal to dividends of 4 percent per annum on the \$8,465,625 capital stock outstanding of Cambria Iron Co.

The cash expenditures for additions and improvements to properties during the year amounted to \$19,914,660.36. The estimated cost of completing the construction authorized and in progress as of December 31, 1923, is \$13,550,000.

Substantial progress has been made in the simplification of the capital stock structure of your corporation in accordance with the plan approved by the stockholders at the special meeting held September 18, 1922. Practically all of the 7 percent noncumulative preferred stock outstanding at the beginning of the year was exchanged for the 7 percent cumulative preferred stock, and a fund provided for the retirement of the small unexchanged balance, so that there now exists only one class of 7 percent preferred stock. One of the results of this exchange was to confer full voting powers upon the class B common stock in accordance with the provisions of the certificate of incorporation of your corporation as amended on September 18, 1922, so that the class B common stock was merged in the common stock and has ceased to exist as a separate class. During the year the holders of \$11,337,700, par amount, of the 8 percent cumulative convertible preferred stock exchanged their stock for the 7 percent cumulative preferred stock leaving \$18,662,300, par amount of the 8 percent cumulative convertible preferred stock outstanding on December 31, 1923. Since that date and to March 1, the date of closing of the books for the transfer of stock, an additional 26,055 shares have been exchanged. The exchange of the balance will complete the simplification planned and your corporation will then have outstanding only two classes of stock; namely, the 7 percent cumulative preferred stock and the common stock.

The number of stockholders to whom the dividends due January 2, 1924, were paid was 49,497 as compared with 27,080 the previous year.

For some years past the employees of your Corporation, through their representation committees, have expressed a desire for a plan which will help them to save systematically a part of their earnings and also to purchase stock of your corporation upon easy terms of payment. To these ends your board of directors, believing it to be of advantage to your corporation to encourage thrift in its employees and also to encourage them to become stockholders, in January of this year approved a plan known as the "Employees saving and stock ownership plan" which contemplates an annual offering through Trustees of a limited amount of stock of your corporation which may be paid for through small deductions made from their earnings. In the initial offering by the trustees under this plan, made on January 31, 1924, shares of the 7 percent cumulative preferred stock of your corporation were offered at the price of \$94 per share and as an incentive to the employees to retain their stock your corporation has agreed to pay to them in January of each year for 5 years a special bonus of \$1 per share for the first year, \$2 for the second year, and so on up to \$5 for the fifth year, conditioned in each case on the employee remaining continuously in the employ of the corporation during the preceding year and retaining the purchased stock. Applications for approximately 40,000 shares have been received from more than 14,000 employees.

The insurance fund plan inaugurated by your corporation in 1918 has continued in successful operation, its scope having been gradually extended.

PROPERTIES OWNED AND LEASED BY SUBSIDIARY COMPANIES

Steel plants

	<i>Tons</i>
Pig iron capacity	6, 610, 000
Ingot capacity	7, 600, 000
<i>Plant</i>	<i>Location</i>
Bethlehem plant	Bethlehem, Pa.
Steelton plant	Steelton, Pa.
Lebanon plant	Lebanon and Reading, Pa.
Maryland plant	Sparrows Point, Md.
Lackawanna plant	Lackawanna, N. Y.
Cambria plant	Johnstown, Pa.
Coatesville plant	Coatesville, Pa.
Detrick and Harvey plant	Baltimore, Md.

Equipment.—Forty-four blast furnaces; 2,150 byproduct coke ovens (174 under construction) with apparatus for the recovery and rectification of benzol products; 4 sintering departments; 2 nodulizing departments; 1 calcining department; 1 concentrating plant; 17 bessemer converters; 116 stationary open-hearth furnaces; twelve 200-ton and two 50-ton tilting open-hearth furnaces; 3 electric steel furnaces; 21 puddle furnaces; 13 blooming mills; 2 slabbing mills; 8 billet mills (1 under construction); 2 Bethlehem special structural mills; 6 standard structural mills; 3 rail mills; 2 rail and structural mills; 2 bar and structural mills; 34 bar mills; 1 muck-bar mill; 2 skelp mills; 1 tube mill; 2 universal-plate mills; 7 sheared-plate mills; 1 universal- and sheared-plate mill; 24 tin-plate mills; 8 double-sheet mills; 2 sheet jobbing mills; 2 puddle mills; 1 wire-rod mill; 1 wire-drawing department; 1 nail department; 1 barbed-wire and woven-fence department; 1 wire-galvanizing department; 2 cold-drawn departments; 3 press and hammer-forge shops; 1 drop-forge department; 1 axle-forging department; 2 steel foundries; 3 iron foundries; 2 brass foundries 1 steel, iron, and brass foundry; 1 ingot-mold foundry; 1 armor-plate department; 1 gun department; 1 shell and projectile department; 1 general steel treatment department; 4 commercial machine shops; 1 automobile and truck steel-wheel shop; 2 rolled-steel-wheel mills; 2 steel-freight-car departments; 1 tool department; 5 structural fabricating shops; 1 tie-plate shop; 3 splice-bar shops; 1 frog-and-switch department; 4 bolt, nut, rivet, and spike departments; 1 rail-anchor shop; 1 agricultural-implement department; 1 plate-flanging department; 1 brickyard; power, service and auxiliary departments; warehouses; water supply for Cambria plant from Conemaugh River and from dams having storage capacity of approximately 12,125 million gallons from watersheds totaling about 392 square miles, conveyed to plant by approximately 33.5 miles of distributing mains at rate of 153 million gallons per 24 hours; 5,872 acres of manufacturing site; 3 harbors; 3 unloading plants each having a capacity of handling from vessels over 1,000 tons of ore per hour 6,408 acres of other real estate; 4,234 dwellings (300 under construction), stores, welfare, and miscellaneous buildings for employees.

Principal products.—Pig iron; ferromanganese; spiegeleisen; blooms; billets; slabs; sheet bars; Bethlehem structural shapes; standard structural shapes; universal and sheared plates; sheet piling; plate piling; flanged and pressed plate products; commercial steel bars; iron bars; muck bars; concrete bars; special and alloy steel bars; cold-rolled steel; cold-drawn steel; spring steel; electric and crucible tool steel; staybolt iron; standard, light, high, and special tee, girder, and guard rails; rail joints; rail braces; rail anchors; splice bars; tie plates; frogs; switches; crossings; special track work; switch stands; turntables; blue annealed sheets; black and galvanized sheets; tin and black plate; forging ingots; fluid-compressed ingots; pressed and hammered forgings; hollow forgings; drop forgings; shafting; steel, iron, and brass castings; tunnel segments; ingot moulds; rolls; armor plate; guns; gun forgings; gun carriages and mounts; caissons and limbers; range finders; sights; shell forgings; completed ammunition; turret mechanism; large gas engines; Bethlehem oil engines; heavy machinery; machine tools; pumps; hydraulic presses; steel bridges; viaducts and buildings; pier caissons; cutting and punching tools; bolts; nuts; rivets; spikes; track bolts; washers; tie rods; toe calks; wire rods; wire nails; barbed wire; woven wire fence; fence posts; steel freight, tank, mine, and special dump cars; forged and pressed car parts; car underframes and trucks; car axles; rolled car wheels; rolled flywheels; rolled

gear blanks; agricultural-implement parts; agricultural shapes; liner wedges; car and bridge knuckle and cotter pins; clevises; annular rolled sections; skelp; lap-welded iron and steel boiler tubes; coke; gas; tar; ammonia liquor; ammonium sulfate; light oil; benzol; motor fuel; toluol; solvent naphtha; naphthalene; etc.

EXHIBIT 15

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

The following is an abstract of sales contracts which are contained in the record herein, between the Pennsylvania Railroad Co., the Baltimore & Ohio Railroad Co. and various producers of steel rails, showing tonnages (in gross tons) placed by the carriers at various times with the respective producers.

To: Pennsylvania R. R. Co.

Exhibit No.	Contract date	Pennsylvania Steel Co.	Maryland Steel Co.	Cambria Steel Co.	Bethlehem Steel Co.	Lackawanna Steel Co.
25869	Jan. 24, 1912				6,600	
25760	do			29,000		
25722	do	31,000				
2573-14	do					12,000
25771	Nov. 23, 1912			37,808		
25735	do	39,136				
25868	do				3,352	
25738	Jan. 14, 1914	7,432				
25786	Mar. 25, 1914			10,000		
25708	do		5,000			
25787	May 25, 1914			350		
25870	July 10, 1914				6,000	
25788	do			22,000		
25741	do	22,000				
25715	do					6,000
25791	Sept. 23, 1914			5,000		
25745	Jan. 20, 1915	2,000				
25871	do				2,000	
25799	do			2,000		
25746	Jan. 28, 1915		2,336			
25872	June 14, 1915				8,050	
25801	do			34,800		
25750	do	33,350				
25709	Oct. 26, 1915		2,250			
25873	Oct. 28, 1915				10,500	
25710	do		36,250			
25808	do			38,500		
25746	do					10,000
25711	Feb. 3, 1916		1,000			
25712	Apr. 17, 1916		1,000			
25816	May 1, 1916			1,770		
25817	June 1, 1916			45,100		
25717	do					12,300
25877	July 14, 1916				1,300	
25881	Oct. 17, 1916				3,057	
25822	Nov. 3, 1916			1,000		
25826	Mar. 15, 1917			15,033		
25719	do					4,100
25890	May 5, 1917				1,000	
25901	July 12, 1919				20,633	
25846	Dec. 21, 1920			45,000		
25909	do				45,000	
25720	do					10,000
25910	Aug. 24, 1921				500	
25847	Jan. 12, 1922			18,000		
25721	do					4,000
25911	do				18,000	
25912	Sept. 30, 1922				23,000	
25853	do			23,000		
25919	July 5, 1923				1,000	
25918	July 18, 1923				1,171	
25920	Sept. 11, 1923				10,000	
25921	Nov. 22, 1923				88,000	
25922	Feb. 6, 1925				45,000	
25923	Nov. 11, 1925				90,000	

To: Baltimore & Ohio R. R. Co.

Exhibit No.	Contract date	Maryland Steel Co.	Cambria Steel Co.	Bethlehem Steel Co.
22556	Feb. 2, 1915.....	4,000		
22559	Mar. 3, 1915.....		9,000	
22557	Oct. 1, 1915.....	11,000		
22560	Nov. 1, 1915.....		26,000	
22567	Nov. 19, 1915.....			3,500
22581	Mar. 20, 1916.....		15,000	
22558	Mar. 28, 1916.....	10,000		
22562	Jan. 19, 1917.....		5,000	
22568	Jan. 22, 1917.....			6,000
22569	Oct. 4, 1920.....			12,000
22570	Dec. 18, 1920.....			12,000
22563	Feb. 4, 1921.....		2,500	
22565	Sept. 30, 1922.....		12,000	
22571	do.....			10,000
22572	Oct. 5, 1923.....			18,000
22573	Nov. 11, 1924.....			20,000
22574	Oct. 19, 1925.....			30,250

EXHIBIT 16

IN THE MATTER OF BETHLEHEM STEEL CORPORATION, ET AL. DOCKET NO. 962

The following is an abstract of sales contracts for steel rails (in gross tons) by various producers with various railroad companies which contracts, or photostatic copies thereof, appear in the record herein.

	Exhibit No.	Contract date	Pennsylvania Steel Co.	Maryland Steel Co.	Cambria Steel Co.	Lackawanna Steel Co.	Bethlehem Steel Co.
Norfolk & Western Ry. Co.....	22602	Nov. 2, 1911			3,500		
	22597	Nov. 3, 1911	6,500				
	22617	Feb. 1, 1912					3,000
	22601	Feb. 26, 1912	2,000				
	22616	do.....					900
	22606	Feb. 28, 1912			1,100		
	22588	Nov. 6, 1912		9,750			
	22607	Nov. 7, 1912			6,900		
	22618	do.....					6,000
	22608	Dec. 1, 1913			5,000		
	22589	Dec. 3, 1913		6,813			
	22619	Dec. 4, 1913					4,107
	22609	Jan. 11, 1915			1,493		
	22620	Jan. 12, 1915					1,500
	22593	Jan. 13, 1915		1,998			
	22610	May 6, 1915			1,000		
	22590	May 7, 1915		2,000			
	22621	do.....					1,000
	22614	May 15, 1915				1,000	
	22591	May 28, 1915		553			
	22592	July 2, 1915		1,500			
	22622	July 6, 1915					1,000
	22623	Aug. 10, 1915					1,300
	22624	Oct. 15, 1915					3,500
	22594	Oct. 16, 1915		4,000			
	22611	Oct. 19, 1915			3,500		
	22615	Oct. 25, 1915				1,000	
	22625	Apr. 1, 1916					4,000
	22595	Apr. 3, 1916		4,000			
	22596	Apr. 27, 1916		1,000			
	22626	Aug. 27, 1917					9,000
	22627	Dec. 8, 1921					24,780
	22612	Jan. 6, 1922			2,700		
	22629	Aug. 27, 1923					21,400
	22631	July 30, 1924					13,500

	Exhibit No.	Contract date	Pennsylvania Steel Co.	Maryland Steel Co.	Cambridge Steel Co.	Lackawanna Steel Co.	Bethlehem Steel Co.
Seaboard Air Line Ry.....	22590	May 13, 1912	-----	-----	-----	5,600	-----
	22584	May 20, 1912	-----	-----	-----	-----	5,200
	22581	Apr. 19, 1913	-----	-----	-----	4,000	-----
	22575	Apr. 24, 1913	-----	500	-----	-----	-----
	22576	do	-----	4,513	-----	-----	-----
	22577	June 4, 1914	-----	4,985	-----	-----	-----
	22582	June 23, 1914	-----	-----	-----	600	-----
	22583	do	-----	-----	-----	3,339	-----
	22578	Dec. 27, 1915	-----	4,500	-----	-----	-----
	22579	Apr. 25, 1916	-----	10,000	-----	-----	-----
	22585	Oct. 3, 1922	-----	-----	-----	-----	15,000
	22586	Feb. 5, 1924	-----	-----	-----	-----	11,530
	22587	Oct. 9, 1924	-----	-----	-----	-----	3,600
Buffalo, Rochester & Pittsburgh Ry. Co.....	4973	Dec. 22, 1919	-----	-----	-----	8,500	-----
	4974	Sept. 26, 1922	-----	-----	-----	-----	5,000
Long Island R. R. Co.....	18753	May 9, 1922	-----	-----	-----	-----	2,500
	18756	Oct. 4, 1922	-----	-----	-----	-----	8,000
	18756	Feb. 17, 1923	-----	-----	-----	-----	2,000
Western Maryland Ry. Co.....	22371	Apr. 18, 1926	-----	3,000	-----	-----	-----
	22372	Jan. 15, 1917	-----	-----	-----	-----	2,000
	22373	Apr. 15, 1920	-----	-----	-----	-----	2,000
	22374	Oct. 29, 1920	-----	-----	-----	-----	2,000
	22375	Dec. 18, 1920	-----	-----	-----	-----	2,000
	22376	Oct. 11, 1922	-----	-----	-----	-----	2,000
Chesapeake & Ohio Ry. Co.....	22658	Sept. 30, 1922	-----	-----	-----	-----	5,000
	22661	Feb. 10, 1923	-----	-----	-----	-----	2,000
	22662	do	-----	-----	-----	-----	1,000
	22663	Sept. 27, 1923	-----	-----	-----	-----	1,350
	22665	do	-----	-----	-----	-----	11,754
	22667	Nov. 6, 1924	-----	-----	-----	-----	5,908
New York, New Haven & Hartford R. R. Co.....	20304	Feb. 13, 1920	-----	-----	-----	21,000	-----
	20345	Jan. 14, 1922	-----	-----	-----	-----	24,500
	20401	Sept. 16, 1922	-----	-----	-----	-----	25,000
	20526	Nov. 24, 1923	-----	-----	-----	-----	20,000
Philadelphia & Reading Ry. Co.....	23517	Oct. 29, 1913	10,000	-----	-----	-----	-----
	23516	Oct. 31, 1913	1,000	-----	-----	-----	-----
	23515	Nov. 5, 1913	-----	-----	-----	-----	5,000
	23520	Oct. 30, 1914	900	-----	-----	-----	-----
	23518	Dec. 28, 1914	2,500	-----	-----	-----	-----
	23519	do	1,000	-----	-----	-----	-----
	23526	Jan. 19, 1915	-----	-----	-----	-----	2,500
	23524	Jan. 27, 1915	-----	-----	-----	1,500	-----
	23522	July 20, 1915	2,750	-----	-----	-----	-----
	23525	do	1,000	-----	-----	-----	-----
	23527	July 23, 1915	-----	-----	-----	-----	1,250
	25528	Sept. 23, 1915	5,000	-----	-----	-----	-----
	23521	Sept. 27, 1915	-----	-----	-----	-----	3,000
	23523	Nov. 11, 1915	-----	-----	-----	-----	3,000
	23531	Mar. 28, 1916	5,000	-----	-----	-----	-----
	23533	Apr. 5, 1916	10,000	-----	-----	-----	-----
	23530	Apr. 6, 1916	-----	-----	-----	-----	4,000
	23532	Apr. 20, 1916	-----	-----	-----	3,000	-----
	23529	Apr. 29, 1916	-----	2,000	-----	-----	-----
	21674	Apr. 14, 1920	-----	-----	-----	-----	15,000
	21677	Aug. 12, 1921	-----	-----	-----	-----	15,000
	21676	Feb. 16, 1922	-----	-----	-----	-----	13,000
	21672	Mar. 10, 1922	-----	-----	1	-----	-----
	21673	Sept. 25, 1922	-----	-----	1	-----	-----
	21678	Sept. 26, 1922	-----	-----	-----	-----	13,000

EXHIBIT 17

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET NO. 962

The following is an abstract of bar sizes shown by Bethlehem Steel Co. as "in stock at Bethlehem, Steelton, Cleveland, Lebanon, and Pittsburgh warehouses, all bars in mill lengths, December 1, 1921," as shown by Commission's exhibit herein, No. 19254.

[Commercial quality steel, under 0.25 carbon]

Hot rolled rounds		Hot rolled flats		Hot rolled hexagons.	Reinforcing steel—hot rolled rounds	Fire steel—hot rolled flats
<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1 $\frac{1}{4}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$ by 1 $\frac{1}{2}$	3 $\frac{1}{2}$ by 3 $\frac{1}{2}$	7 $\frac{1}{8}$	5 $\frac{1}{16}$	1 by 1 $\frac{1}{4}$
3 $\frac{1}{8}$	2 $\frac{3}{16}$	7 $\frac{1}{8}$ by 1 $\frac{1}{4}$	3 $\frac{1}{2}$ by 1 $\frac{1}{2}$	1	3 $\frac{1}{8}$	1 $\frac{1}{8}$ by 1 $\frac{1}{4}$
1 $\frac{3}{8}$	2 $\frac{3}{4}$	7 $\frac{1}{8}$ by 1 $\frac{1}{2}$	3 $\frac{1}{2}$ by 5 $\frac{1}{8}$	1 $\frac{3}{8}$	5 $\frac{1}{8}$	1 $\frac{1}{4}$ by 3 $\frac{1}{16}$
1 $\frac{1}{2}$	2 $\frac{7}{8}$	7 $\frac{1}{8}$ by 5 $\frac{1}{8}$	3 $\frac{1}{2}$ by 1 $\frac{3}{16}$	1 $\frac{1}{2}$ $\frac{1}{16}$	3 $\frac{1}{4}$	1 $\frac{1}{2}$ by 3 $\frac{1}{16}$
9 $\frac{1}{16}$	2 $\frac{1}{2}$ $\frac{1}{16}$	1 by 3 $\frac{1}{16}$	3 $\frac{1}{2}$ by 7 $\frac{1}{8}$	2	1 $\frac{3}{16}$	1 $\frac{1}{8}$ by 1 $\frac{1}{2}$
5 $\frac{1}{8}$	3	1 by 1 $\frac{1}{4}$	3 $\frac{1}{2}$ by 1		2 $\frac{3}{32}$	1 $\frac{3}{4}$ by 3 $\frac{1}{16}$
1 $\frac{1}{16}$	3 $\frac{1}{8}$	1 by 3 $\frac{1}{16}$	4 by 5 $\frac{1}{8}$		5 $\frac{5}{64}$	2 by 3 $\frac{1}{8}$
3 $\frac{1}{4}$	3 $\frac{1}{4}$	1 $\frac{3}{64}$ by 1 $\frac{1}{4}$	4 by 1 $\frac{1}{4}$		7 $\frac{1}{8}$	2 $\frac{1}{2}$ by 7 $\frac{1}{8}$
1 $\frac{3}{16}$	3 $\frac{3}{8}$	1 $\frac{3}{64}$ by 1 $\frac{3}{64}$	4 by 2 $\frac{1}{4}$		6 $\frac{3}{64}$	2 $\frac{3}{4}$ by 7 $\frac{1}{8}$
7 $\frac{1}{8}$	3 $\frac{1}{2}$	1 $\frac{3}{32}$ by 7 $\frac{1}{32}$	4 $\frac{1}{4}$ by 3 $\frac{1}{8}$		1	4 by 3 $\frac{1}{8}$
1 $\frac{5}{16}$	3 $\frac{5}{8}$	1 $\frac{1}{4}$ by 5 $\frac{1}{8}$	4 $\frac{1}{4}$ by 1 $\frac{1}{2}$			
1	3 $\frac{3}{4}$	1 $\frac{1}{2}$ by 3 $\frac{1}{16}$	4 $\frac{1}{2}$ by 3 $\frac{1}{8}$			
1 $\frac{1}{16}$	3 $\frac{7}{8}$	1 $\frac{1}{2}$ by 7 $\frac{1}{16}$	4 $\frac{1}{2}$ by 1 $\frac{1}{2}$		1 $\frac{3}{4}$	
1 $\frac{1}{8}$	4	1 $\frac{1}{2}$ by 5 $\frac{1}{8}$	5 by 1 $\frac{1}{4}$		1 $\frac{7}{8}$	
1 $\frac{3}{16}$	4 $\frac{1}{4}$	1 $\frac{3}{4}$ by 7 $\frac{1}{8}$	5 $\frac{1}{2}$ by 3 $\frac{1}{8}$		1 $\frac{1}{16}$	
1 $\frac{1}{4}$	4 $\frac{1}{2}$	2 by 1 $\frac{1}{2}$	5 $\frac{1}{2}$ by 5 $\frac{1}{8}$		1 $\frac{1}{4}$	
1 $\frac{1}{2}$	4 $\frac{3}{4}$	2 by 1 $\frac{3}{4}$	5 $\frac{3}{4}$ by 1			
1 $\frac{3}{8}$	5	2 $\frac{1}{4}$ by 3 $\frac{1}{16}$	6 by 1 $\frac{1}{4}$			
1 $\frac{1}{2}$	5 $\frac{1}{2}$	2 $\frac{1}{4}$ by 3 $\frac{1}{8}$	6 by 5 $\frac{1}{16}$			
1 $\frac{1}{2}$	5 $\frac{3}{4}$	2 $\frac{1}{4}$ by 1 $\frac{1}{2}$	6 by 7 $\frac{1}{8}$			
1 $\frac{1}{16}$	6	2 $\frac{1}{4}$ by 1 $\frac{1}{4}$	6 by 1 $\frac{1}{8}$			
1 $\frac{5}{8}$	6 $\frac{1}{4}$	2 $\frac{1}{2}$ by 3 $\frac{1}{16}$	6 by 1 $\frac{3}{8}$			
1 $\frac{1}{4}$ $\frac{1}{16}$	6 $\frac{1}{2}$	2 $\frac{1}{2}$ by 3 $\frac{1}{8}$	6 $\frac{1}{2}$ by 5 $\frac{1}{8}$			
1 $\frac{3}{4}$		2 $\frac{1}{2}$ by 1 $\frac{3}{8}$	7 by 7 $\frac{1}{8}$			
1 $\frac{1}{2}$ $\frac{1}{16}$		2 $\frac{3}{4}$ by 3 $\frac{1}{8}$	7 by 1 $\frac{1}{4}$			
1 $\frac{7}{8}$		2 $\frac{3}{4}$ by 7 $\frac{1}{8}$	8 by 3 $\frac{1}{8}$			
1 $\frac{1}{2}$ $\frac{1}{16}$		3 by 1 $\frac{1}{8}$	8 by 1 $\frac{1}{2}$			
2		3 by 3 $\frac{1}{16}$	9 $\frac{1}{2}$ by 5 $\frac{1}{8}$			
2 $\frac{1}{16}$		3 by 1 $\frac{1}{32}$				
2 $\frac{1}{8}$		3 by 7 $\frac{1}{8}$				
2 $\frac{1}{16}$		3 by 1				
2 $\frac{1}{4}$		3 by 1 $\frac{1}{2}$				
2 $\frac{3}{8}$		3 $\frac{1}{4}$ by 1 $\frac{1}{2}$				
2 $\frac{1}{2}$						

¹ Square twisted.

Abstract of bar sizes of carbon steel "in stock at Steelton and Bethlehem plants, June 14, 1919," as shown by Commission's exhibit herein, No. 20823.

Steelton plant				Bethlehem plant	
Flats			Squares	Rounds	Flats
<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1 by 1 $\frac{1}{4}$	3 $\frac{1}{2}$ by 7 $\frac{1}{16}$	5 $\frac{1}{2}$ by 3 $\frac{1}{4}$	3 $\frac{1}{4}$	2 $\frac{1}{32}$	5 by 3 $\frac{1}{16}$
1 by 1 $\frac{1}{2}$	3 $\frac{1}{2}$ by 1 $\frac{1}{2}$	6 by 5 $\frac{1}{16}$	7 $\frac{1}{8}$	2 $\frac{3}{32}$	5 $\frac{1}{2}$ by 3 $\frac{1}{16}$
1 $\frac{3}{8}$ by 3 $\frac{1}{8}$	3 $\frac{1}{2}$ by 9 $\frac{1}{16}$	6 by 3 $\frac{1}{8}$	1 $\frac{1}{8}$	3 $\frac{1}{16}$	
1 $\frac{1}{2}$ by 3 $\frac{1}{8}$	3 $\frac{1}{2}$ by 5 $\frac{1}{8}$	6 by 7 $\frac{1}{16}$	1 $\frac{1}{2}$	3 $\frac{1}{8}$	
1 $\frac{1}{2}$ by 1 $\frac{1}{2}$	3 $\frac{1}{2}$ by 7 $\frac{1}{8}$	6 by 1 $\frac{1}{2}$	2 $\frac{1}{16}$	3 $\frac{3}{8}$	
1 $\frac{3}{4}$ by 1 $\frac{1}{2}$	3 $\frac{1}{2}$ by 1	6 by 9 $\frac{1}{16}$	2 $\frac{1}{2}$	4	
2 by 1 $\frac{1}{4}$	3 $\frac{3}{4}$ by 7 $\frac{1}{16}$	6 by 5 $\frac{1}{8}$	2 $\frac{1}{16}$	4 $\frac{1}{16}$	
2 by 5 $\frac{1}{16}$	3 $\frac{3}{4}$ by 1 $\frac{1}{2}$	6 by 1 $\frac{1}{16}$	3		
2 by 3 $\frac{1}{8}$	4 by 5 $\frac{1}{16}$	6 by 1 $\frac{1}{16}$	3 $\frac{1}{2}$		
2 by 1 $\frac{1}{2}$	4 by 3 $\frac{1}{8}$	6 by 1			
2 by 5 $\frac{1}{8}$	4 by 7 $\frac{1}{16}$	6 $\frac{1}{2}$ by 3 $\frac{1}{8}$			
2 by 3 $\frac{1}{4}$	4 by 1 $\frac{1}{2}$	6 $\frac{1}{2}$ by 7 $\frac{1}{16}$			
2 by 7 $\frac{1}{8}$	4 by 9 $\frac{1}{16}$	6 $\frac{1}{2}$ by 1 $\frac{1}{2}$			
2 $\frac{1}{4}$ by 1 $\frac{1}{4}$	4 by 5 $\frac{1}{8}$	6 $\frac{1}{2}$ by 5 $\frac{1}{8}$			
2 $\frac{1}{4}$ by 3 $\frac{1}{16}$	4 by 3 $\frac{1}{4}$	7 by 5 $\frac{1}{16}$			
2 $\frac{1}{2}$ by 1 $\frac{1}{4}$	4 by 1 $\frac{1}{8}$	7 by 3 $\frac{1}{8}$			
2 $\frac{1}{2}$ by 3 $\frac{1}{16}$	4 by 1 $\frac{3}{16}$	7 by 7 $\frac{1}{16}$			
2 $\frac{1}{2}$ by 3 $\frac{1}{8}$	4 by 1 $\frac{1}{4}$	7 by 5 $\frac{1}{8}$			
2 $\frac{3}{4}$ by 3 $\frac{1}{4}$	4 by 1 $\frac{1}{2}$	7 by 1 $\frac{1}{64}$			
3 by 1 $\frac{1}{4}$	4 $\frac{1}{4}$ by 5 $\frac{1}{16}$	7 by 3 $\frac{1}{4}$			
3 by 3 $\frac{1}{16}$	4 $\frac{1}{2}$ by 3 $\frac{1}{8}$	7 $\frac{1}{2}$ by 3 $\frac{1}{8}$			
3 by 7 $\frac{1}{8}$	4 $\frac{1}{2}$ by 1 $\frac{1}{2}$	7 $\frac{1}{2}$ by 1 $\frac{1}{2}$			
3 by 1 $\frac{1}{2}$	5 by 1 $\frac{1}{4}$	7 $\frac{1}{2}$ by 3 $\frac{1}{4}$			
3 by 3 $\frac{1}{16}$	5 by 3 $\frac{1}{8}$	7 $\frac{1}{2}$ by 7 $\frac{1}{8}$			
3 by 3 $\frac{1}{8}$	5 by 1 $\frac{1}{2}$	8 by 7 $\frac{1}{16}$			
3 by 1	5 by 5 $\frac{1}{8}$	8 by 1 $\frac{1}{2}$			
3 $\frac{1}{4}$ by 3 $\frac{1}{8}$	5 by 1 $\frac{1}{16}$	8 by 5 $\frac{1}{8}$			
3 $\frac{1}{4}$ by 7 $\frac{1}{16}$	5 by 3 $\frac{1}{4}$				
3 $\frac{1}{2}$ by 1 $\frac{1}{4}$	5 by 2				
3 $\frac{1}{2}$ by 3 $\frac{1}{16}$	5 $\frac{1}{4}$ by 7 $\frac{1}{16}$				
3 $\frac{1}{2}$ by 3 $\frac{1}{8}$	5 $\frac{1}{2}$ by 7 $\frac{1}{8}$				

EXHIBIT 18

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET NO. 962

The following is a partial abstract of invoices rendered by Bethlehem Steel Co. and Lackawanna Steel Co. to Gifford Wood & Co., Hudson, N. Y., which appear in the record herein during the years 1920 and 1923, showing, section 1, that shipments of substantial quantities of steel bars were made by both companies; and section 2, that substantial quantities of exactly the same form and size were shipped from Bethlehem, Pa., and Lackawanna, N. Y.

SEC. 1

From Bethlehem Steel Co.			From Lackawanna Steel Co.		
Exhibit No.	Invoice date	Weight	Exhibit No.	Invoice date	Weight
16458.....	July 31, 1919	105,000	16549.....	July 10, 1920	108,700
16460.....	Jan. 17, 1920	37,175	16550.....	do.....	108,380
16462.....	Mar. 15, 1920	8,330	16551.....	Aug. 7, 1920	101,285
16463.....	Mar. 25, 1920	45,612	16552.....	Aug. 9, 1920	38,165
16464.....	July 14, 1920	16,900	16472 ¹	Jan. 13, 1923	148,845
16465.....	Aug. 5, 1920	289,800	16471 ¹	Jan. 11, 1923	149,380
16466.....	Sept. 20, 1920	34,300	16473 ¹	Feb. 6, 1923	58,800
16467.....	Sept. 28, 1920	28,800	16474 ¹	Feb. 7, 1923	41,520
16468.....	Dec. 9, 1920	7,810			
16469.....	Dec. 29, 1920	33,805			

SEC. 2

Size	From Bethlehem Steel Co.		From Lackawanna Steel Co.	
	Exhibit No.	Pounds	Exhibit No.	Pounds
1½ by ¾ inch.....	16458	40,120	16549	71,150
1½ by ½ inch.....	16458	29,820	16549	21,865
1½ by ¾ inch.....	16460	37,175	16551	32,720
½ by ¾ inch.....	16458	35,060	16551	56,430
½ by ¾ inch.....	16465	65,500	16552	29,715
½ by ¾ inch.....	16465	42,600	16472	¹ 148,845
½ by ¾ inch.....	-----	-----	16471	¹ 149,380

¹ Shipped from Lackawanna subsequent to acquisition by Bethlehem Steel Co.

EXHIBIT 19

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL.—DOCKET NO. 962

The following is an abstract from contracts, invoices and acknowledgments of orders contained in the record herein covering bolt and rivet rods manufactured by Bethlehem Steel Co., Lackawanna Steel Co., and Cambria Steel Co., consigned to various manufacturers of bolts and rivets as indicated, showing—

- (a) the various sizes of rods ordered or shipped;
 (b) the tonnage covered by contract, acknowledgment or invoice;
 (c) the price of base sizes delivered at destination (see exception C)
 (d) the then current freight rate from Pittsburgh to destination;
 (e) the "Pittsburgh equivalent" price;
 (f) the then current price at Pittsburgh as quoted in "The Iron Age."
 (g) the then current price of Carnegie Steel Co., "base Pittsburgh."

Exhibit No.	Date	Producer	Consignee	Destination	Product	Tons	Delivered price	Rate from Pittsburgh	Pittsburgh equivalent	Pittsburgh price quoted in "The Iron Age"	Price of Carnegie Steel Co., "base Pittsburgh"
1 21221	May 23, 1919	Bethlehem Steel Co.	Lebanon Valley Iron & Steel Co.	Lebanon, Pa.	Bolt rods: 4 7/8-inch	100	\$2.595	\$0.245	\$2.35	\$2.35	\$2.35
2 21221	do.	do.	do.	do.	3 3/4-inch	50	2.595	.245	2.35	2.35	2.35
1 21222	May 31, 1919	do.	do.	do.	3 3/4-inch	40	2.595	.245	2.35	2.35	2.35
1 21223	June 16, 1919	do.	do.	do.	4 7/8-inch	50	2.595	.245	2.35	2.35	2.35
21224	June 20, 1919	do.	do.	do.	5 5/8-inch	40	2.64	.245	2.395	2.35	2.35
21224	do.	do.	do.	do.	4 7/8-inch	50	2.64	.245	2.395	2.35	2.35
2 21225	June 23, 1919	do.	do.	do.	2 3/4-inch	10	2.64	.245	2.395	2.35	2.35
2 21225	do.	do.	do.	do.	3 1/2-inch	20	2.64	.245	2.395	2.35	2.35
21226	June 28, 1919	do.	do.	do.	1 5/8-inch	5	2.595	.245	2.35	2.35	2.35
21226	do.	do.	do.	do.	3 3/4-inch	50	2.595	.245	2.35	2.35	2.35
21227	June 30, 1919	do.	do.	do.	4 7/8-inch	50	2.595	.215	2.35	2.35	2.35
22987	July 1, 1919	Lackawanna Steel Co.	Buffalo Bolt Co.	Buffalo, N. Y.	Various sizes	5,000	2.565	.245	2.35	2.35	2.35
21228	July 7, 1919	Bethlehem Steel Co.	Lebanon Valley Iron & Steel Co.	Lebanon, Pa.	Various sizes	500	2.595	.245	2.35	2.35	2.35
22248	Feb. 4, 1920	Lackawanna Steel Co.	Buffalo Bolt Co.	Buffalo, N. Y.	Various sizes	3,000	2.71	.21	2.50	2.75	2.35
21247	Mar. 9, 1920	Cambria Steel Co.	Lebanon Valley Iron & Steel Co.	Lebanon, Pa.	Various sizes	100	(1)	2.45	2.50	3.50	2.35
21248	Mar. 31, 1920	do.	do.	do.	Various sizes	90	(1)	.245	2.45	3.75	2.35
23262	Apr. 7, 1921	do.	Buffalo Bolt Co.	North Tonawanda, N. Y.	0.477 to 0.492-inch	52	2.295	.295	2.00	2.00	2.35
23263	Apr. 8, 1921	do.	do.	do.	0.477 to 0.492-inch	47	2.295	.295	2.00	2.00	2.35
23265	Apr. 9, 1921	do.	do.	do.	0.601 to 0.616-inch	56	2.295	.295	2.00	2.00	2.35

See footnotes at end of table.

Exhibit No.	Date	Producer	Consignee	Destination	Product	Tons	Deliv- ered price	Rate from Pitts- burgh	Pitts- burgh equiva- lent	Pitts- burgh price quoted in the IronAge	Price of Car- negie Steel Co. "base Pitts- burgh"
23234-6	May 17, 1921	Lackawanna Steel Co.	Buffalo Bolt Co.	North Tonawanda, N. Y.	Bolt rods—Continued. 0.601 to 0.616-inch	19	\$2.25	\$0.295	\$1.955	\$2.10	\$2.10
23237	May 21, 1921	do	do	do	0.601 to 0.616-inch	39	2.25	.295	1.955	2.10	2.10
23240	June 20, 1921	do	do	do	0.601 to 0.616-inch	56	2.25	.295	1.955	2.10	2.10
23241	do	do	do	do	0.601 to 0.616-inch	39	2.25	.295	1.955	2.10	2.10
23242	do	do	do	do	0.849 to 0.864-inch	15	2.25	.295	1.955	2.10	2.10
23243	do	do	do	do	0.724 to 0.739-inch	31	2.25	.295	1.955	2.10	2.10
23244	Nov. 9, 1921	do	do	do	¾-inch	13	1.85	.35	1.50	1.50	1.60
25548	do	do	do	do	¾-inch	15	1.85	.35	1.50	1.50	1.60
25549	Nov. 23, 1921	do	do	do	¾-inch	50	1.85	.35	1.50	1.50	1.60
15890	July 16, 1919	do	do	do	¾-inch	500	2.65	.30	2.35	2.35	2.35
15892	Sept. 3, 1919	do	do	do	¾-inch	600	2.65	.30	2.35	2.35	2.35
16077	Aug. 26, 1919	do	do	do	¾-inch	53	2.65	.30	2.35	2.35	2.35
16085	Dec. 3, 1919	do	do	do	¾-inch	26	2.65	.30	2.35	2.35	2.35
16133	Feb. 27, 1921	do	do	do	¾-inch	50	2.515	.405	2.10	2.00	2.35
15960	Apr. 11, 1921	Cambria Steel Co.	do	do	0.740 to 1-inch	45	2.415	.405	2.00	2.00	2.35
15893	Mar. 1, 1922	do	do	do	0.630-inch	15	2.415	.405	2.00	2.00	2.35
16175	Mar. 29, 1922	do	do	do	0.610 to 0.740-inch	600	1.755	.405	1.35	1.35	1.40
21252	Oct. 19, 1921	do	do	do	¾-inch and larger	42	1.705	.405	1.30	1.30	1.35
21253	do	American Equipment Co.	do	Norristown, Pa.	¾-inch and larger	300	1.85	.35	1.50	1.60	1.65
21254	June 11, 1919	do	do	do	¾-inch to 7/8	450	2.505	.245	2.35	2.35	2.35
21257	July 3, 1919	do	do	do	¾-inch to 7/8	450	2.385	.245	2.35	2.35	2.35
21259	Mar. 30, 1922	do	do	do	"Bars for Rivets"	400	1.76	.36	1.40	1.40	1.49

† Sizes shown on Commission's exhibit, herein, No. 21256.

NOTE.—During a portion of the year 1921 succeeding the announcement by Midvale Steel & Ordnance Co. of "radical reductions in the selling prices of standard rolled products," also during a portion of the year 1922, in which both Midvale Steel & Ordnance Co. and Lackawanna Steel Co. were selling standard rolled products on an f. o. b. mill basis, the prices of Carnegie Steel Co., "base Pittsburgh," were variable. In making comparison with the Pittsburgh equivalent of sales by other producers as shown herein, the lower figure shown by Carnegie Steel Co. has been used.

1 Rolled at Steelton, as per exhibit 21234 and exhibit 21240.

2 Rolled at Bethlehem, as per exhibit 21234 and exhibit 21237.

3 "Premium prices" for specific delivery, which were charged by various producers during a considerable portion of the year, as per Commission's exhibits Nos.

4 Quoted "base Pittsburgh."

5 Date of order, Mar. 28, 1921.

6 Date of order, Apr. 8, 1921.

7 "Within limits of sellers' mills Nos. 2, 6, 9, 10 and 11."

8 Sizes shown on Commission's exhibit, herein, No. 21253.

EXHIBIT 20

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET NO. 962

The following is a partial Abstract of invoices appearing in the record herein rendered by Bethlehem Steel Co. to Endicott Forging & Manufacturing Co., Endicott, N. Y., for the period June 4, 1919, to June 15, 1920, covering substantial shipments of Steel Billets. In addition to the date of invoice, size of product, weight shipped and price, there is also shown the chemical analysis to the extent such analysis is disclosed by invoices.

In cases where more than one heat number is shown upon an invoice, and the tonnage of such heat numbers is divided, the analysis covering the greater tonnage has been shown, provided, however, that all tonnage takes the same price.

Produced at—	Exhibit No.	Date of invoice	Description	Weight	Price	Analysis					
						Carbon	Phosphorus	Manganese	Sulfur	Silicon	Nickel
Steelton.	12067	June 4, 1919	Billets:	94,260	\$3.15	0.15	0.007	0.43	0.036	0.02	0.03
	12068	June 5, 1919	2 by 2	115,080	3.15	.17	.009	.39	.038	.02	.58
	12075	Aug. 11, 1919	2½ by 2½	219,600	3.15	.15	.010	.50	.037	.03	.60
	12077	Aug. 12, 1919	2½ by 2½	125,100	3.75	.12	.007	.42	.038	.03	.60
	Do.	Oct. 3, 1919	2 by 2	100,525	3.15	.15	.010	.51	.036	.08	.52
	12086	Oct. 3, 1919	2 by 2	100,525	3.15	.15	.010	.51	.036	.08	.52
	12087	Oct. 4, 1919	2½ by 2½	24,726	3.15	.12	.010	.48	.030	.08	.60
	Do.	do.	2 by 2	57,064	3.15	.12	.010	.48	.030	.08	.60
	12094	Oct. 21, 1919	2 by 2	44,895	2.825	.19	.010	.50	.039	.08	.60
	Do.	do.	2½ by 2½	60,695	3.15	.12	.010	.48	.030	.08	.60
	12102	Nov. 15, 1919	2½ by 2½	29,870	3.15	.14	.007	.48	.035	.07	.60
	Do.	do.	2 by 2	15,170	2.825	.18	.010	.50	.039	.07	.60
Bethlehem.	12102	do.	1½ by 1½	35,860	2.825	.18	.010	.50	.039	.07	.60
	12102	Dec. 22, 1919	2½ by 2½	106,700	3.15	.10	.009	.41	.037	.07	.60
	Do.	Dec. 23, 1919	2 by 2	9,440	5.50	.12	.010	.53	.033	.01	3.59
	12121	do.	2½ by 2½	55,460	3.15	.10	.010	.35	.032	.01	.60
	Do.	Jan. 5, 1920	2½ by 2½	116,380	5.50	.10	.010	.35	.032	.01	.60
	12124	do.	2½ by 2½	36,970	3.15	.10	.010	.35	.032	.01	.60
	Do.	do.	2½ by 2½	39,140	3.15	.10	.010	.35	.032	.01	.60
	12125	do.	2½ by 2½	97,260	5.50	.12	.010	.53	.033	.01	.60
	Do.	do.	2½ by 2½	127,320	5.50	.13	.009	.51	.038	.17	3.75
	12125	do.	2 by 2	127,320	5.50	.105	.010	.52	.039	.02	.59
	Do.	Jan. 6, 1920	2½ by 2½	12,175	3.40	.105	.010	.52	.039	.02	.59
	12126	Jan. 8, 1920	2½ by 2½	67,225	3.15	.105	.010	.60	.039	.02	.59
	Do.	do.	2½ by 2½	240,100	5.50	.12	.007	.60	.030	.10	3.52
	12127	do.	2½ by 2½	119,325	3.15	.110	.007	.54	.038	.07	.59
	Do.	Jan. 16, 1920	1½ square to 2½ square.	81,475	5.50	.165	.010	.60	.029	.10	.59
	12129	do.	1¾ square to 2½ square.	183,142	3.15	.120	.008	.45	.029	.10	.59
	Do.	do.	1¾ square to 2½ square.	125,358	5.50	.150	.012	.56	.035	.10	3.74
	12130	do.	1¾ square to 2½ square.	125,358	5.50	.150	.012	.56	.035	.10	3.74
	Do.	Jan. 23, 1920	2½ by 2½	104,400	3.15	.10	.010	.40	.030	.10	.59

Produced at--	Exhibit No.	Date of invoice	Description	Weight	Price	Analysis						
						Carbon	Phos-phorus	Manga-nese	Sulfur	Silicon	Nickel	
Steel ton.	12134	Jan. 24, 1920	Billets--Continued.	182,100	\$ 3.15	0.10	0.010	0.53	0.034	0.03	0.58	
	Do.	12135		Jan. 26, 1920	77,600	3.15	.10	.010	.53	.034	.03	.58
	Do.	12137		Feb. 3, 1920	97,930	3.15	.10	.010	.50	.037	.02	.58
	Do.	12137		do.	86,670	3.40	.105	.010	.55	.042	.03	.58
	Do.	12143		Feb. 12, 1920	68,200	2.75	.18	.008	.52	.042		
	Do.	12144		Feb. 25, 1920	23,060	2.75	.19	.011	.42	.046		
	Do.	12144		do.	33,640	2.93	.370	.026	.75	.045		
	Do.	12146		Mar. 5, 1920	105,980	3.15	.10	.010	.50	.037	.02	.56
	Do.	12161		Mar. 23, 1920	22,220	2.93	.370	.026	.75	.045		
	Do.	12162		Mar. 24, 1920	426,000	2.60	.110	.010	.54	.037		.57
	Do.	12162		do.	220,800	3.40	.110	.010	.800	.033		.57
	Do.	12163		do.	216,600	3.40	.110	.008	.50	.037	.01	.54
	Do.	12163½		do.	10,310	5.50	.110	.010	.48	.036	.02	3.52
	Do.	12163½		do.	69,455	3.525	.340	.015	.62	.049		
	Do.	12164½		Mar. 27, 1920	68,950	3.525	.340	.015	.62	.049		
	Do.	12166		Apr. 8, 1920	118,400	3.40	.120	.028	.57	.032	.01	.57
	Do.	12175		May 14, 1920	14,094	8.00	.495	.021	.78	.037		3.33
Do.	12175	do.	37,536	6.25	.120	.010	.65	.035		3.67		
Do.	12175	do.	55,520	3.475	.190	.008	.50	.042				
Bethlehem	12181	June 15, 1920	2½ by 2½	56,345	3.525	.380	.024	.71	.049	.190		

EXHIBIT 21

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

The following is a partial Abstract of invoices contained in the record herein, rendered by Bethlehem Steel Co. and Lackawanna Steel Co. against Porcupine Co., Bridgeport, Conn., showing shipments of substantial quantities of identical forms and sizes of structural shapes, including bar sizes, from both Lackawanna, N. Y., and Bethlehem, Pa., prior to the acquisition by Bethlehem Steel Co. of the properties of Lackawanna Steel Co.

Product	From Lackawanna, N. Y.			From Bethlehem, Pa.		
	Exhibit No.	Invoice date	Weight	Exhibit No.	Invoice date	Weight
Angles:						
2½ by 2½ by ½ inch.....	15602	July 21, 1919	12, 205	15428	Aug. 6, 1919	24, 570
2½ by 2½ by ½ inch.....	15611	Sept. 15, 1919	15, 655	15440	Oct. 25, 1919	11, 090
2½ by 2½ by ½ inch.....	15656	Aug. 25, 1920	24, 910	15461	Sept. 15, 1920	19, 280
3 by 3 by ¼ inch.....	15615	Feb. 18, 1920	35, 280	15469	Oct. 21, 1920	34, 398
3 by 3 by ⅝ inch.....	15615	do.....	43, 920	15469	do.....	21, 740
3 by 3 by ⅝ inch.....	15603	Aug. 2, 1919	18, 007			
3 by 3 by ⅝ inch.....	15615	Feb. 18, 1920	43, 920			
3½ by 3 by ⅝ inch.....	15605	Aug. 2, 1919	19, 483	15458	June 30, 1920	32, 983
3½ by 3 by ⅝ inch.....	15618	Mar. 1, 1920	22, 176			
4 by 3 by ⅝ inch.....	15646	July 30, 1920	35, 136	15434	Sept. 2, 1919	19, 296
4 by 4 by ⅝ inch.....	15604	Aug. 2, 1919	12, 544	15433	Aug. 26, 1919	19, 600
4 by 4 by ⅝ inch.....	15608	Aug. 26, 1919	39, 200	15562	May 25, 1923	27, 048
4 by 4 by ⅝ inch.....	15608	do.....	32, 800	15433	Aug. 26, 1919	14, 432
4 by 4 by ⅝ inch.....				15578	Jan. 20, 1923	16, 400
6 by 3½ by ⅝ inch.....	15632	June 8, 1920	14, 040	15429	Aug. 9, 1919	23, 400
6 by 3½ by ⅝ inch.....	15633	do.....	27, 910	15550	Apr. 24, 1923	21, 000
6 by 3½ by ⅝ inch.....	15648	Aug. 9, 1920	43, 875			

479	Oct. 21, 1922	24,444	14,900
480	Nov. 1, 1922	9,125	87,500
481	Nov. 13, 1922		92,400
482	Nov. 22, 1922	36,079	9,240
483	Nov. 23, 1922	5,400	37,120
484	Dec. 4, 1922	30,124	1,019
	do.	32,606	28,620

¹ Plates shipped from Sparrows Point, Md., not produced at Bethlehem.
² Invoice rendered by Bethlehem Steel Co.

² Invoice rendered by Bethlehem Steel Co.,

The following shows that substantial quantities of exactly the same form and size, or their practical equivalents, were furnished by both Lackawanna and Bethlehem.

From Bethlehem, Pa.		Product	From Lackawanna, N. Y.	
Exhibit No.	Pounds		Exhibit No.	Pounds
		Angles:		
461	10,190.	2 by 2 by $\frac{3}{16}$	427	3,865
461	15,660	2 by 2 by $\frac{1}{4}$	431	8,585
458	16,340	2 by 2 by $\frac{1}{4}$		
462	10,004	2½ by 2½ by $\frac{1}{4}$	431	6,595
468	10,004	2½ by 2½ by $\frac{1}{4}$		
458	20,064	4 by 4 by $\frac{1}{4}$	448	13,200
472	13,200	4 by 4 by $\frac{1}{4}$		
457	24,928	4 by 4 by $\frac{5}{16}$	441	16,400
483	32,800	4 by 4 by $\frac{5}{16}$	445	17,515
473	24,600	6 by 4 by $\frac{3}{8}$	447	30,996
480	14,760	6 by 4 by $\frac{3}{8}$	426	23,376
		Beams:		
		8 by 18	411	10,800
		8 by 18	413	10,800
		8 by 18	423	21,600
		8 by 18	434	21,600
465	22,080	8 by 18.4	437	22,190
		8 by 18.4	451	11,040
		9 by 21	415	12,201
		9 by 21	416	12,600
475	27,250	9 by 21.8		
		10 by 25	416	15,000
		10 by 25	428	15,000
		10 by 25	434	30,000
475	15,761	10 by 25.4	451	12,192
481	22,860	10 by 25.4		
458	24,117	12 by 31.5	411	18,900
		12 by 31.5	417	18,900
		12 by 31.5	430	37,800
		12 by 31.8	451	28,620
475	19,080	12 by 31.8		
480	57,240	12 by 31.8		
485	28,620	12 by 31.8		
		15 by 42	411	25,200
		15 by 42	427	27,300
		15 by 42	428	45,360
474	31,396	15 by 42.9		

The following illustrates the fact that orders placed with Bethlehem Steel Co., prior to October 21, 1922, and partially filled by shipments from Bethlehem, Pa., were, subsequent to the acquisition by Bethlehem Steel Co. of the properties of Lackawanna, filled in part, by shipments from Lackawanna, N. Y.

The following is a partial abstract of invoices, showing (a) materials made only by Bethlehem Steel Co. and ordered under the numbers shown herein; (b) a partial list of the standard forms covered by the same order numbers, some of which were shipped from Lackawanna, N. Y., immediately subsequent to the acquisition of Lackawanna by Bethlehem.

Ordered from Bethlehem, Pa.				Supplied from Lackawanna				
Example No.	Invoice Date	(a) Order No.	Bethlehem Specials	Example No.	Invoice Date	Order No.	(b) Standard shapes	Weight
479.....	10-21-22	AT 24	H 12 by 65 ⁵	480.....	11-1-22	AT 24	Beams 12 by 31.8	38, 160
479.....	do.....	AT 24	G-28 by 185.....	480.....	do.....	AT 24	Angles 2½ by 11	8, 000
479.....	do.....	AT 24	G-10 by 50.....	481.....	11-13-22	AT 24	Beams, 10 by 25.4	30, 480
480.....	11-1-22	AT 24	BC-6 by 23.....	481.....	do.....	AT 24	Beams, 6 by 12.5	22, 500
				486.....	12-11-22	AT 24	Channels 10 by 15.3	18, 360
				486.....	do.....	AT 24	Channels 8 by 11.5	13, 800
				486.....	do.....	AT 24	Channels 7 by 9.8	17, 640
				486.....	do.....	AT 24	Angles 6 by 4 by ¾	19, 680
478.....	10-20-22	AT 74	H-12 by 64.5.....	486.....	do.....	AT 74	Channels 10 by 15.3	31, 722
482.....	11-22-22	AT 74	G-24 by 141.....	486.....	do.....	AT 74	Beams, 15 by 42.9	27, 885
482.....	do.....	AT 74	H-12 by 113.....					
482.....	do.....	AT 74	H-10 by 83.5.....					
482.....	do.....	AT 74	H-10 by 77.5.....					
482.....	do.....	AT 74	H-10 by 60.5.....					
482.....	do.....	AT 74	H-10 by 49.5.....					

EXHIBIT 23

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. Docket No. 9

The following is a copy of Commission's Exhibit, herein, No. 1866, which antedates the acquisition by Bethlehem Steel Co. of the properties of Lackawanna Steel Co.:

UTICA LOWVILLE TOWER LINES FOR THE NORTHERN NEW YORK UTILITIES CO.

BETHLEHEM, PA., August 28, 1922.

ARCHBOLD-BRADY CO.,

Mr. M. A. DUNNE,

Secretary and Treasurer, Syracuse, N. Y.

DEAR SIR: We have this day executed contract with you for eighteen hundred fifty (1850) net tons of plain standard sections, sheared and universal mill plates, for the above operation, our price No. AH-8061-C, dated August 19, 1922, and enclose herewith your copy of agreement.

Thanking you for this business, which will have our best attention, we remain

Yours very truly,

(Signed) G. H. BLAKELEY,

Manager, Structural and Plate Sales.

The following tabulation is made from invoices rendered by Bethlehem Steel Co. to Archbold-Brady Co. bearing exhibit numbers herein as noted, which invoices show that the shipments covered thereby, applied upon the contract above referred to.

These invoices also show that subsequent to the acquisition by Bethlehem Steel Co. of the properties of Lackawanna Steel Co., substantial quantities of structural shapes applying upon the same contract were shipped from Lackawanna, N. Y., and that substantial quantities were identically the same form and size as furnished from Bethlehem, Pa., as illustrated herein.

Exhibit No.	Date of invoice	Shipped from Bethlehem, Pa.						Shipped from Lackawanna, N. Y. ¹					
		Tonnage			Delivered price			Tonnage			Delivered price		
		Plates ¹	Standard shapes	Bars	Plates	Shapes	Bars	Plates	Standard shapes	Bars	Plates	Shapes	Bars
1487.....	Sept. 26, 1922		49,643			\$2.04							
1489.....	Sept. 27, 1922		73,664			2.04							
1490.....	Sept. 28, 1922		40,140			2.04							
1491.....	Sept. 27, 1922		52,247			2.04							
1492.....	Sept. 21, 1922		49,590			2.04							
1493.....	Sept. 20, 1922		79,896			2.04							
1494.....	Sept. 19, 1922		63,892			2.04							
1495.....	Sept. 11, 1922		3,542			2.04							
1496.....	Sept. 15, 1922		38,678			2.04							
1441.....	Oct. 3, 1922	25,570			\$2.09								
1440.....	Oct. 8, 1922		53,226			2.04							
1437.....	Oct. 13, 1922		54,040			2.04							
1438.....	do.		56,756			2.04							
1439.....	Oct. 18, 1922		81,070			2.04							
1444.....	Oct. 21, 1922		72,186			2.04							
1443.....	Oct. 30, 1922		104,550			2.04							
1442.....	do.		120,776			2.04							
1449.....	Oct. 13, 1922		62,853			2.04							
1448.....	Oct. 23, 1922		53,518			2.04							
1452.....	Oct. 27, 1922		109,227			2.04							
1447.....	Oct. 30, 1922		113,977			2.04							
1446.....	Oct. 31, 1922		223,749			2.04							
1453.....	Nov. 1, 1922	15,695			2.09								
1454.....	Nov. 3, 1922		29,812			2.04							
1455.....	Nov. 7, 1922		71,750			2.04							
1456.....	Nov. 18, 1922							62,362				\$2.04	
1458.....	do.							87,276				2.04	
1459.....	Nov. 10, 1922		91,723			2.04							
1460.....	Nov. 17, 1922							132,446				2.04	
1461.....	Nov. 21, 1922							58,032				2.04	
1463.....	Nov. 15, 1922							52,202				2.04	
1464.....	Nov. 9, 1922		102,580			2.04							
1465.....	Nov. 27, 1922		83,136			2.04							
1466.....	Nov. 3, 1922		103,536			2.04							
1467.....	Nov. 17, 1922							39,325				2.04	
1468.....	Nov. 6, 1922		99,732			2.04							
1472.....	Dec. 9, 1922							8,192				2.04	
1471.....	Nov. 3, 1922		86,502			2.04							
1475.....	Dec. 12, 1922							91,828				2.04	
1477.....	Dec. 8, 1922		80,664			2.04							
1478.....	do.		75,924			2.04							
1480.....	Dec. 22, 1922		42,525			2.04							
1482.....	Dec. 15, 1922		77,981			2.04							
1483.....	Dec. 9, 1922							113,401				2.04	

¹ Plates shipped from Sparrows Point, Md.

Lackawanna Steel Co. acquired by Bethlehem Steel Co. November 1922.

Illustrations of the fact that identical forms and sizes were shipped from both plants

From Bethlehem, Pa.		Product	From Lackawanna, N. Y.		From Bethlehem, Pa.		Product	From Lackawanna, N. Y.	
Exhibit No.	Pounds		Exhibit No.	Pounds	Exhibit No.	Pounds		Exhibit No.	Pounds
1442.....	45,564	Angles 6 by 6 by 3/8.	1483.....	78,809	1487.....	49,643	Channels: 10 by 15.3.	1458.....	87,276
1477.....	57,869	Channels: 7 by 9.8.	1467.....	39,325	1489.....	73,664	Channels: 10 by 15.3.	1456.....	62,362
1478.....	75,924	Channels: 7 by 9.8.	1460.....	116,734	1491.....	35,222	Channels: 10 by 15.3.	1461.....	10,496
1482.....	51,387	Channels: 7 by 9.8.	1454.....	29,812	1446.....	201,339	Channels: 12 by 20.7.	1452.....	109,227

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

The following is a partial abstract of invoices contained in the record herein showing shipments of structural shapes and bars from Bethlehem, Pa., to Archbold-Brady Co., Syracuse, N. Y., immediately preceding the acquisition by Bethlehem Steel Corporation of the properties of Lackawanna Steel Co.; also shipments from both Bethlehem, Pa., and Lackawanna, N. Y., immediately succeeding such acquisition. There is also shown the price "delivered Syracuse" and customer's order numbers to Bethlehem Steel Co., as indicated upon the invoices and as stated by Commission's witness, M. A. Dunne.

Exhibit No.	Date of invoice	Shipped from Bethlehem, Pa.			Shipped from Lackawanna, N. Y.			Delivered price			Customer's order nos. to Bethlehem Steel Co.
		Plates	Shapes	Bars	Plates	Shapes	Bars	Plates	Shapes	Bars	
		Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	- Cents	Cents	Cents	
1496	Sept. 15, 1922		38, 678						2.04		9528, 9529, 9532, 9533, 9536, 9537.
1494	Sept. 19, 1922		63, 892						2.04		9529, 9532, 9533, 9537.
1493	Sept. 20, 1922		79, 896						2.04		9528, 9536.
1492	Sept. 21, 1922		49, 890						2.04		9528, 9529, 9532, 9533, 9536, 9537.
1491	Sept. 27, 1922		52, 237						2.04		9528, 9530, 9534, 9535, 9536, 9538.
1490	Sept. 28, 1922		40, 140						2.04		9528, 9532, 9533, 9537.
1489	Sept. 27, 1922		73, 664						2.04		9528, 9536.
1487	Sept. 26, 1922		49, 643						2.04		9528, 9536.
1486	Oct. 10, 1922		53, 980	41, 580					2.04	2.19	9531.
1437	Oct. 13, 1922		56, 756						2.04		9556, 9568, 9570, 9571, 9580.
1438	do								2.04		9528, 9529, 9532, 9533, 9537, 9564, 9565, 9566, 9567, 9568, 9570, 9571.
1439	Oct. 18, 1922		69, 110	2 11, 960					2.04	2.04	9529, 9532, 9533, 9537, 9564, 9565, 9566, 9567, 9572, 9573, 9576.
1440	do		53, 326						2.04		9529, 9532, 9537, 9556, 9564, 9565, 9566, 9568, 9570, 9571, 9580.
1442	Oct. 30, 1922		120, 776						2.04		9529, 9532, 9533, 9537, 9564, 9565, 9566, 9568, 9570, 9571.
1443	do		104, 550						2.04		9556, 9564, 9565, 9566, 9567, 9568, 9570, 9571, 9580.
1444	Oct. 21, 1922		72, 186						2.04		9528, 9536.
1445	Oct. 20, 1922		36, 255						2.19	2.19	9526, 9531.
1446	Oct. 31, 1922		201, 339	22, 410					2.04	2.04	9528, 9535, 9536, 9564, 9565, 9566, 9567.
1447	Oct. 30, 1922		113, 977						2.04		9528, 9536, 9564, 9566, 9567.
1448	Oct. 23, 1922		53, 518						2.04		9528, 9529, 9532, 9533, 9536, 9537, 9564, 9565, 9566, 9567, 9572, 9573, 9576, 9580.
1449	Oct. 13, 1922		62, 883						2.04		9528, 9530, 9532, 9533, 9534, 9535, 9536, 9537, 9538, 9564, 9565, 9566, 9567, 9581, 9558.
1451	Oct. 24, 1922			42, 575						2.19	9424, 9425.
1452	Oct. 27, 1922		109, 227						2.04		9528, 9536, 9564, 9565, 9566, 9567.
1454	Nov. 3, 1922				29, 812				2.04		9572, 9573, 9576.
1471	do		38, 031	2 48, 470					2.04	2.04	9530, 9534, 9535, 9538, 9564, 9565, 9566, 9567, 9569, 9585.

[illegible]

¹ Property of Lackawanna Steel Co. Acquired by Bethlehem Steel Corporation November 1952.
² Bar-size shapes.

EXHIBIT 25

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET #962

This is a partial statement of shipments of standard structural shapes and plates, also Bethlehem special sections, by Bethlehem Steel Co. (see exception) to Russell Wheel & Foundry Co., Detroit, Mich., during the years 1922, 1923, 1924, 1925, and a portion of the year 1926 as shown by exhibits, herein, to which reference is made. These shipments include substantial quantities of exactly the same form and size from Bethlehem, Pa., and from the competitive plants acquired at Lackawanna, N. Y., and Johnstown, Pa.

EXCEPTION.—Shipments indicated thus “(*)” were made by Cambria Steel Co. prior to the acquisition of that company by Bethlehem Steel Co.

FROM BETHLEHEM, PA.

Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates	Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates
6	Sept. 4, 1922	26,799	27,192	-----	10	Jan. 11, 1923	-----	96,400	-----
8	Sept. 6, 1922	-----	76,725	-----	11	do	4,517	19,135	-----
9	Sept. 12, 1922	7,825	61,975	-----	12	Jan. 16, 1923	35,175	33,859	-----
1	Aug. 23, 1922	-----	66,767	-----	14	Jan. 26, 1923	-----	70,700	-----
2	Aug. 28, 1922	14,815	26,388	-----	15	Feb. 2, 1923	61,048	10,439	-----
3	do	28,274	12,263	-----	16	Feb. 8, 1923	24,180	18,339	-----
4	Aug. 30, 1922	-----	45,768	-----	17	Feb. 26, 1923	19,225	24,809	-----
5	do	49,350	15,300	-----	18	do	19,186	86,740	-----
10	Oct. 3, 1922	31,329	13,588	-----	19	Mar. 5, 1923	15,022	36,266	-----
11	Oct. 6, 1922	33,564	5,266	-----	20	Mar. 7, 1923	-----	57,600	-----
12	do	10,154	31,337	-----	23	Apr. 2, 1923	47,001	615	-----
13	Oct. 20, 1922	51,520	12,750	-----	64	May 19, 1923	-----	62,378	-----
14	do	32,266	588	-----	79	June 2, 1923	45,223	20,240	-----
15	Oct. 24, 1922	15,330	43,200	-----	127	July 26, 1923	88,400	12,636	-----
16	Oct. 31, 1922	33,950	28,350	-----	161	Aug. 10, 1923	47,600	9,026	-----
17	Nov. 6, 1922	53,900	32,336	-----	184	Aug. 20, 1923	19,162	24,744	-----
18	Nov. 9, 1922	3,850	66,282	-----	189	do	963	53,890	-----
19	do	993	36,125	-----	230	Sept. 6, 1923	3,632	62,512	-----
20	Nov. 20, 1922	9,256	47,835	-----	236	Sept. 7, 1923	-----	34,507	-----
21	Nov. 23, 1922	-----	63,819	-----	237	Sept. 11, 1923	4,637	52,469	-----
22	Dec. 1, 1922	22,392	26,652	-----	249	Sept. 17, 1923	1,737	37,419	-----
23	Dec. 7, 1922	10,952	34,996	-----	254	Sept. 25, 1923	-----	94,828	-----
24	Dec. 8, 1922	-----	42,793	-----	256	Sept. 27, 1923	22,967	25,471	-----
26	Dec. 15, 1922	-----	45,461	-----	262	Oct. 25, 1923	51,787	12,630	-----

FROM LACKAWANNA, N. Y.

25	Dec. 11, 1922	-----	36,125	159	Aug. 9, 1923	-----	112,310
27	Dec. 15, 1922	102,413	-----	162	Aug. 10, 1923	-----	89,425
28	Dec. 16, 1922	74,068	-----	168	do	-----	100,575
29	do	61,644	-----	170	Aug. 11, 1923	-----	105,985
30	Dec. 19, 1922	63,614	-----	175	Aug. 13, 1923	-----	113,420
31	Dec. 23, 1922	85,515	-----	179	Aug. 17, 1923	59,452	-----
32	Dec. 29, 1922	68,004	-----	183	Aug. 18, 1923	-----	120,100
13	Jan. 23, 1923	62,830	-----	196	Aug. 23, 1923	106,145	-----
22	Mar. 27, 1923	-----	79,015	198	Aug. 22, 1923	-----	109,155
47	Apr. 30, 1923	-----	28,460	200	Aug. 23, 1923	-----	106,920
48	do	-----	-----	202	Aug. 24, 1923	-----	111,410
61	May 17, 1923	62,445	-----	206	Aug. 25, 1923	-----	74,155
68	May 24, 1923	63,380	-----	208	Aug. 27, 1923	-----	119,875
76	May 29, 1923	57,058	-----	213	Aug. 29, 1923	-----	149,565
139	Aug. 4, 1923	-----	118,115	215	do	-----	21,175
143	Aug. 6, 1923	-----	106,640	216	Aug. 31, 1923	-----	119,270
145	Aug. 7, 1923	-----	108,235	234	Sept. 7, 1923	-----	66,095
147	Aug. 8, 1923	-----	144,180	245	Sept. 12, 1923	-----	86,520
149	do	-----	113,695	252	Sept. 22, 1923	-----	66,600
156	Aug. 9, 1923	-----	148,295	-----	-----	-----	-----

FROM JOHNSTOWN, PA.

Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates	Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates
1*	Jan. 6, 1923			59, 180	80	June 4, 1923		103, 800	
2*	Jan. 8, 1923		120, 233		81	June 5, 1923		61, 382	
4*	Jan. 9, 1923		147, 193		82	do		71, 218	
6*	Jan. 18, 1923		147, 526		83	June 6, 1923			138, 440
8*	Mar. 28, 1923		51, 873		84	June 7, 1923			47, 230
9*	do		46, 812		85	do		108, 407	
21	Apr. 3, 1923		86, 906		86	do		137, 357	
25	Apr. 4, 1923		85, 754		87	June 8, 1923			142, 760
26	Apr. 6, 1923		114, 387		88	do			180, 320
28	Apr. 9, 1923		89, 708		89	June 9, 1923			221, 460
29	Apr. 10, 1923		67, 271		90	June 11, 1923			164, 630
30	Apr. 17, 1923		43, 548		91	do		121, 893	
31	do		81, 332		92	June 14, 1923			80, 280
33	Apr. 20, 1923		146, 712		93	do			105, 320
35	Apr. 23, 1923		51, 114		95	June 16, 1923			107, 180
36	do		60, 023		96	do		30, 975	
37	Apr. 24, 1923		53, 016		97	June 19, 1923			107, 830
38	do		82, 685		98	June 20, 1923			79, 200
39	do		85, 582		99	June 23, 1923		132, 774	
41	Apr. 26, 1925		106, 724		101	do		46, 794	
42	Apr. 27, 1923		108, 779		102	June 26, 1923			103, 830
43	Apr. 28, 1923		235, 614		103	June 27, 1923			148, 630
44	Apr. 30, 1923		259, 009		104	June 29, 1923			66, 320
45	do		89, 598		105	June 30, 1923			122, 450
46	do		201, 976		106	July 2, 1923		36, 687	
50	May 2, 1923		142, 692		107	do			72, 580
51	May 4, 1923		41, 292		108	do			82, 520
52	do		34, 917		110	July 3, 1923			149, 870
53	do		122, 940		111	July 5, 1923			50, 240
54	do		184, 399		112	July 6, 1923			61, 210
55	May 8, 1923		114, 357		113	July 9, 1923			62, 450
57	May 10, 1923		54, 700		114	do		156, 800	
58	May 12, 1923		130, 630		115	July 13, 1923			78, 420
59	May 17, 1923		179, 433		116	do			120, 620
63	May 18, 1923		134, 560		117	do			122, 650
65	May 21, 1923		15, 942		118	July 16, 1923			240, 900
66	do			59, 440	120	July 20, 1923			68, 750
67	do		100, 346		121	July 21, 1923		39, 494	
69	May 25, 1923		76, 095		122	do			65, 120
70	do		97, 272		123	July 25, 1923		100, 600	
71	May 26, 1923		130, 774		124	do		91, 686	
72	May 28, 1923			114, 670	125	do		79, 873	
73	do		150, 963		126	July 26, 1923		85, 745	
74	do		9, 576		128	July 27, 1923		2, 897	
75	do		140, 594		129	do			81, 770
77	May 30, 1923			159, 880	130	July 30, 1923			130, 970
78	May 31, 1923			128, 260					

FROM: BETHLEHEM, PA.

1	Feb. 27, 1924		37, 837		32	Apr. 30, 1924	25, 394	21, 956	
2	do		47, 827		33	do	25, 560	21, 155	
3	Mar. 8, 1924	37, 188	11, 107		34	May 1, 1924	35, 364	19, 773	
4	Mar. 11, 1924	12, 393	40, 710		35	May 3, 1924	34, 896	2, 544	
5	Mar. 10, 1924		50, 949		36	May 4, 1924			35, 224
6	Mar. 13, 1924	24, 917	13, 247		37	May 7, 1924	15, 351	21, 219	
7	do	50, 497	4, 200		38	May 8, 1924	11, 684	26, 955	
7-A	Mar. 14, 1924	33, 467	4, 675		39	May 9, 1924	20, 708	18, 971	
8	Mar. 24, 1924			104, 220	40	May 12, 1924	41, 018	13, 674	
9	Mar. 25, 1924	41, 030	4, 416		46	May 16, 1924		69, 476	
11	Apr. 1, 1924	31, 725	5, 664		47	May 29, 1924	65, 143	13, 032	
12	Apr. 3, 1924		192, 630		48	June 5, 1924	8, 550	54, 810	
14	Apr. 7, 1924	29, 490	40, 590		50	June 10, 1924		51, 756	
15	Apr. 10, 1924		12, 232		51	June 12, 1924		42, 097	
16	Apr. 11, 1924	17, 190	44, 772		52	June 13, 1924	36, 450	5, 476	
21	Apr. 14, 1924	36, 266	192		53	do		42, 320	
22	Apr. 17, 1924	55, 040	273		54	June 14, 1924	23, 787	15, 010	
23	do	42, 511	654		55	do	1, 165	41, 484	
24	Apr. 18, 1924	15, 194	25, 301		56	June 17, 1924		23, 303	
25	Apr. 19, 1924	23, 658	19, 093		57	do	1, 656	58, 534	
26	Apr. 22, 1924	62, 188	2, 467		59	July 1, 1924	61, 802		
27	do	18, 623	17, 569		60	do		21, 425	
29	Apr. 26, 1924	42, 799	3, 714		62	July 16, 1924	34, 159	6, 433	
30	Apr. 29, 1924	20, 363	20, 608		64	July 25, 1924		81, 300	
31	do		40, 717		74	Sept. 2, 1924	34, 861	23, 985	

¹ Shipments from Sparrows Point, Md., plates not produced at Bethlehem.

FROM: LACKAWANNA, N. Y.

Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates	Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates
68.....	July 28, 1924	-----	65, 417	-----	158.....	Dec. 23, 1924	-----	89, 394	-----

FROM JOHNSTOWN, PA.

133.....	July 31, 1923	-----	-----	46, 870	261.....	do	-----	107, 924	-----
134.....	Aug. 1, 1923	-----	68, 550	-----	263.....	Oct. 26, 1923	-----	-----	50, 920
135.....	Aug. 2, 1923	-----	132, 011	-----	10.....	Mar. 31, 1924	-----	68, 551	-----
137.....	Aug. 3, 1923	-----	88, 872	-----	13.....	Apr. 4, 1924	-----	40, 382	-----
138.....	do	-----	72, 430	-----	17.....	Apr. 14, 1924	-----	32, 640	-----
151.....	Aug. 9, 1923	-----	131, 865	-----	18.....	Apr. 10, 1924	-----	19, 980	-----
154.....	do	-----	101, 471	-----	19.....	Apr. 11, 1924	-----	29, 808	-----
165.....	Aug. 10, 1923	-----	-----	123, 400	20.....	Apr. 15, 1924	-----	98, 672	-----
167.....	do	-----	30, 068	-----	42.....	May 15, 1924	-----	32, 683	-----
173.....	Aug. 13, 1923	-----	-----	92, 860	43.....	do	-----	-----	11, 550
177.....	do	-----	92, 090	-----	44.....	do	-----	51, 590	-----
180.....	Aug. 17, 1923	-----	83, 437	-----	49.....	June 9, 1924	-----	-----	51, 680
182.....	do	-----	77, 149	-----	58.....	June 26, 1924	-----	61, 088	-----
185.....	Aug. 20, 1923	-----	87, 393	-----	61.....	July 15, 1924	-----	55, 159	-----
187.....	do	-----	161, 306	-----	63.....	July 24, 1924	-----	81, 634	-----
190.....	Aug. 21, 1923	-----	-----	65, 810	65.....	July 26, 1924	-----	-----	21, 430
192.....	do	-----	166, 616	-----	66.....	do	-----	8, 149	-----
194.....	Aug. 22, 1923	-----	138, 903	-----	67.....	July 28, 1924	-----	16, 372	-----
204.....	Aug. 25, 1923	-----	114, 095	-----	69.....	do	-----	132, 045	-----
207.....	Aug. 27, 1923	-----	104, 028	-----	70.....	July 31, 1924	-----	32, 858	-----
209.....	do	-----	96, 245	-----	71.....	do	-----	68, 797	-----
210.....	Aug. 28, 1923	-----	140, 358	-----	72.....	Aug. 11, 1924	-----	112, 124	-----
211.....	do	-----	111, 464	-----	73.....	Aug. 18, 1924	-----	-----	70, 700
212.....	Aug. 29, 1923	-----	100, 292	-----	76.....	Sept. 17, 1924	-----	69, 137	-----
219.....	Sept. 3, 1923	-----	13, 243	-----	77.....	Sept. 19, 1924	-----	144, 800	-----
220.....	do	-----	12, 484	-----	78.....	Sept. 20, 1924	-----	90, 060	-----
221.....	do	-----	-----	11, 220	79.....	Sept. 23, 1924	-----	97, 060	-----
225.....	Sept. 5, 1923	-----	112, 488	-----	80.....	do	-----	145, 492	-----
226.....	do	-----	98, 235	-----	81.....	Sept. 27, 1924	-----	46, 726	-----
227.....	do	-----	73, 461	-----	82.....	Sept. 20, 1924	-----	55, 177	-----
228.....	do	-----	175, 502	-----	84.....	Oct. 1, 1924	-----	-----	23, 470
229.....	do	-----	-----	50, 810	85.....	do	-----	33, 900	-----
232.....	Sept. 7, 1923	-----	115, 314	-----	98.....	Oct. 15, 1924	-----	64, 626	-----
238.....	Sept. 11, 1923	-----	78, 485	-----	104.....	Oct. 19, 1924	-----	55, 048	-----
239.....	do	-----	55, 077	-----	116.....	Oct. 23, 1924	-----	-----	121, 040
240.....	do	-----	135, 626	-----	133.....	Oct. 31, 1924	-----	23, 543	-----
242.....	do	-----	53, 148	-----	134.....	do	-----	-----	72, 360
243.....	do	-----	75, 426	-----	140.....	Nov. 7, 1924	-----	-----	90, 460
244.....	Sept. 12, 1923	-----	38, 243	-----	142.....	do	-----	20, 119	-----
247.....	Sept. 17, 1923	-----	72, 968	-----	150.....	Nov. 14, 1924	-----	75, 000	-----
250.....	Sept. 18, 1923	-----	92, 664	-----	152.....	Nov. 15, 1924	-----	-----	53, 240
251.....	Sept. 21, 1923	-----	77, 846	-----	154.....	Nov. 20, 1924	-----	-----	38, 080
255.....	Sept. 26, 1923	-----	59, 960	-----	159.....	Dec. 25, 1924	-----	94, 854	-----
257.....	Sept. 28, 1923	-----	68, 586	-----	161.....	Dec. 30, 1924	-----	105, 560	-----
258.....	Sept. 29, 1923	-----	54, 550	-----	163.....	do	-----	21, 697	-----
259.....	Oct. 3, 1923	-----	6, 768	-----	165.....	Dec. 31, 1924	-----	61, 560	-----
260.....	do	-----	6, 445	-----	166.....	do	-----	156, 078	-----

FROM BETHLEHEM, PA.

75.....	Sept. 13, 1924	57, 300	6, 564	-----	118.....	Oct. 23, 1924	35, 840	9, 779	-----
83.....	Sept. 30, 1924	37, 650	26, 166	-----	119.....	do	7, 341	31, 282	-----
86.....	Oct. 3, 1924	31, 090	6, 671	-----	121.....	Oct. 25, 1924	-----	71, 560	-----
88.....	Oct. 6, 1924	13, 920	6, 196	-----	122.....	do	3, 860	38, 466	-----
89.....	do	52, 784	3, 034	-----	124.....	Oct. 27, 1924	9, 566	36, 545	-----
91.....	Oct. 7, 1924	60, 415	3, 222	-----	126.....	Oct. 28, 1924	35, 837	19, 055	-----
92.....	Oct. 10, 1924	-----	-----	174, 840	128.....	Oct. 30, 1924	39, 565	24, 775	-----
93.....	do	-----	40, 960	-----	130.....	do	29, 610	41, 712	-----
94.....	Oct. 11, 1924	26, 755	22, 951	-----	131.....	Oct. 31, 1924	37, 335	30, 498	-----
95.....	Oct. 13, 1924	2, 065	49, 081	-----	136.....	Nov. 3, 1924	35, 448	3, 841	-----
96.....	do	30, 635	6, 567	-----	138.....	Nov. 4, 1924	-----	67, 525	-----
97.....	do	40, 432	470	-----	139.....	Nov. 5, 1924	40, 950	27, 880	-----
99.....	Oct. 15, 1924	2, 820	67, 820	-----	143.....	Nov. 8, 1924	29, 661	659	-----
100.....	Oct. 16, 1924	37, 628	237	-----	144.....	do	21, 259	31, 355	-----
102.....	do	25, 871	14, 108	-----	146.....	Nov. 10, 1924	29, 850	36, 718	-----
103.....	Oct. 17, 1924	40, 080	4, 284	-----	147.....	Nov. 11, 1924	-----	65, 351	-----
106.....	Oct. 21, 1924	-----	42, 570	-----	148.....	do	-----	41, 099	-----
108.....	do	5, 640	67, 144	-----	149.....	Nov. 12, 1924	19, 431	17, 146	-----
109.....	do	638	47, 119	-----	151.....	Nov. 14, 1924	-----	64, 170	-----
111.....	Oct. 22, 1924	24, 425	15, 376	-----	153.....	Nov. 15, 1924	35, 723	3, 018	-----
112.....	do	-----	68, 340	-----	155.....	Nov. 26, 1924	26, 781	34, 048	-----
113.....	do	9, 370	26, 715	-----	157.....	Nov. 27, 1924	34, 650	57, 435	-----
114.....	do	32, 607	4, 757	-----	160.....	Dec. 26, 1924	9, 226	28, 620	-----

FROM BETHLEHEM, PA.—Continued

Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates	Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates
1.....	Jan. 1, 1925	26,830	37,853	-----	12.....	Feb. 10, 1925	31,680	13,840	-----
2.....	do	39,864	-----	-----	16.....	Feb. 11, 1925	45,259	3,321	-----
6.....	Jan. 2, 1925	47,865	769	-----	20.....	Feb. 13, 1925	14,955	25,240	-----
8.....	do	62,150	-----	-----	25.....	Feb. 16, 1925	6,565	42,941	-----
11.....	Jan. 5, 1925	50,375	-----	-----	26.....	Feb. 14, 1925	-----	64,853	-----
12.....	do	65,422	-----	-----	29.....	Feb. 17, 1925	-----	-----	110,488
14.....	Jan. 6, 1925	93,822	-----	-----	30.....	Feb. 18, 1925	9,843	22,835	-----
15.....	Jan. 7, 1925	43,092	-----	-----	38.....	Feb. 20, 1925	50,315	10,203	-----
19.....	do	76,530	1,242	-----	41.....	do	58,466	-----	-----
20.....	do	35,765	3,811	-----	42.....	do	47,414	17,481	-----
23.....	Jan. 8, 1925	111,352	8,660	-----	16.....	Feb. 23, 1925	33,408	39,023	-----
21.....	Jan. 9, 1925	51,555	10,796	-----	48.....	Feb. 25, 1925	3,350	17,887	-----
25.....	do	102,826	-----	-----	50.....	Feb. 26, 1925	10,320	28,687	-----
26.....	do	45,390	-----	-----	59.....	Mar. 2, 1925	15,534	25,084	-----
27.....	do	65,750	-----	-----	59.....	Mar. 3, 1925	-----	19,360	-----
28.....	Jan. 10, 1925	69,685	410	-----	66.....	Mar. 6, 1925	32,746	34,802	-----
33.....	do	18,058	18,456	-----	71.....	Mar. 10, 1925	10,382	12,004	-----
37.....	Jan. 12, 1925	57,269	-----	-----	75.....	Mar. 12, 1925	44,710	18,354	-----
41.....	do	61,834	-----	-----	78.....	Mar. 16, 1925	45,557	16,068	-----
43.....	Jan. 13, 1925	34,287	-----	-----	79.....	do	20,826	20,996	-----
44.....	do	50,880	-----	-----	80.....	Mar. 17, 1925	35,085	4,217	-----
45.....	do	41,050	-----	-----	81.....	Mar. 21, 1925	36,331	3,487	-----
46.....	Jan. 14, 1925	46,321	12,009	-----	82.....	Mar. 23, 1925	77,823	6,408	-----
52.....	Jan. 16, 1925	69,644	-----	-----	87.....	Apr. 2, 1925	43,469	2,464	-----
54.....	do	41,510	62,009	-----	89.....	Apr. 17, 1925	58,902	11,252	-----
56.....	Jan. 17, 1925	39,800	26,057	-----	90.....	Apr. 18, 1925	25,049	25,128	-----
57.....	do	78,155	-----	-----	91.....	Apr. 21, 1925	-----	-----	140,575
59.....	Jan. 19, 1925	18,386	29,281	-----	92.....	Apr. 23, 1925	35,350	4,929	-----
61.....	do	67,395	1,104	-----	97.....	Apr. 29, 1925	35,976	6,333	-----
62.....	Jan. 20, 1925	60,768	-----	-----	98.....	Apr. 30, 1925	2,091	37,101	-----
63.....	Jan. 21, 1925	49,550	-----	-----	101.....	May 2, 1925	47,874	38,987	-----
64.....	do	17,201	2,560	-----	103.....	May 7, 1925	20,258	40,878	-----
65.....	Jan. 22, 1925	33,450	12,643	-----	111.....	May 30, 1925	57,750	22,099	-----
67.....	do	36,510	-----	-----	114.....	June 15, 1925	29,141	13,100	-----
68.....	do	47,083	-----	-----	115.....	do	8,295	13,193	-----
71.....	Jan. 25, 1925	66,186	1,461	-----	116.....	June 16, 1925	16,359	6,469	-----
76.....	Jan. 21, 1925	-----	-----	177,755	124.....	June 20, 1925	39,530	6,434	-----
78.....	do	4,230	83,086	-----	125.....	June 22, 1925	28,796	2,145	-----
87.....	Jan. 27, 1925	34,082	6,883	-----	128.....	June 25, 1925	8,600	28,401	-----
89.....	Jan. 29, 1925	32,763	5,413	-----	129.....	June 27, 1925	-----	65,209	-----
90.....	Jan. 31, 1925	23,030	42,119	-----	130.....	do	-----	55,025	-----
91.....	do	47,901	-----	-----	133.....	June 30, 1925	41,675	7,848	-----
1.....	Feb. 2, 1925	66,935	19,164	-----	141.....	July 1, 1925	23,882	17,411	-----
5.....	Feb. 6, 1925	18,340	44,913	-----	142.....	July 2, 1925	16,305	23,917	-----
8.....	Feb. 9, 1925	9,905	52,569	-----					

FROM LACKAWANNA, N. Y.

3.....	Jan. 2, 1925	-----	116,885	22.....	Feb. 16, 1925	-----	66,135
16.....	Jan. 7, 1925	-----	118,050	31.....	Feb. 19, 1925	-----	144,510
30.....	Jan. 10, 1925	-----	105,340	39.....	Feb. 20, 1925	-----	63,440
38.....	Jan. 12, 1925	-----	79,275	55.....	Feb. 28, 1925	-----	166,990
58.....	Jan. 19, 1925	108,290	-----	76.....	Mar. 12, 1925	-----	52,890
82.....	Jan. 27, 1925	-----	81,285	83.....	Mar. 23, 1925	130,045	-----
6.....	Feb. 7, 1925	69,6--	-----	84.....	-----	-----	130,285
13.....	Feb. 11, 1925	-----	99,240				

FROM JOHNSTOWN, PA.

9.....	Jan. 3, 1925	77,462	-----	18.....	Feb. 12, 1925	-----	39,610
13.....	Jan. 6, 1925	112,705	-----	27.....	Feb. 16, 1925	1,856	-----
22.....	Jan. 8, 1925	75,258	-----	28.....	do	64,400	95,480
29.....	Jan. 10, 1925	142,889	-----	36.....	Feb. 20, 1925	-----	-----
34.....	Jan. 12, 1925	99,299	-----	43.....	Feb. 21, 1925	121,456	-----
36.....	do	84,210	-----	44.....	do	142,608	-----
47.....	Jan. 15, 1925	-----	66,030	45.....	Feb. 23, 1925	145,056	-----
50.....	do	37,260	-----	53.....	Feb. 26, 1925	-----	34,430
51.....	do	49,910	-----	60.....	Mar. 6, 1925	41,948	-----
55.....	Jan. 17, 1925	104,142	-----	62.....	do	-----	11,250
69.....	Jan. 22, 1925	91,339	-----	63.....	do	29,344	-----
72.....	Jan. 23, 1925	95,216	-----	65.....	do	-----	10,750
73.....	do	124,168	-----	67.....	do	36,275	-----
74.....	Jan. 24, 1925	86,439	-----	68.....	Mar. 6, 1925	47,678	-----
75.....	do	83,089	-----	69.....	Mar. 10, 1925	149,346	-----
79.....	Jan. 26, 1925	3,460	-----	70.....	do	116,610	-----
80.....	do	36,900	-----	72.....	do	126,130	-----
81.....	Jan. 27, 1925	106,023	-----	73.....	do	105,431	-----
84.....	do	156,225	-----	74.....	do	104,532	-----
2.....	Feb. 3, 1925	-----	115,240	77.....	Mar. 13, 1925	114,760	-----
10.....	Feb. 10, 1925	63,718	-----	88.....	Apr. 2, 1925	103,936	-----

FROM JOHNSTOWN, PA.—Continued

Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates	Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates
93.....	Apr. 23, 1925	-----	88,363	-----	117.....	June 17, 1925	-----	46,093	-----
94.....	Apr. 25, 1925	-----	71,625	-----	118.....	June 20, 1925	-----	-----	114,460
96.....	do	-----	64,647	-----	119.....	do	-----	-----	114,970
99.....	Dec. 31, 1924	-----	144,936	-----	120.....	do	-----	-----	53,130
100.....	May 2, 1925	-----	124,095	-----	121.....	do	-----	-----	149,490
102.....	do	-----	26,742	-----	123.....	do	-----	-----	153,580
104.....	May 14, 1925	-----	-----	23,830	126.....	June 22, 1925	-----	-----	106,990
106.....	May 18, 1925	-----	107,805	-----	127.....	June 24, 1925	-----	-----	75,504
107.....	May 20, 1925	-----	63,199	-----	132.....	June 27, 1925	-----	-----	57,890
108.....	May 23, 1925	-----	104,085	-----	135.....	June 30, 1925	-----	-----	60,190
109.....	May 25, 1925	-----	14,498	-----	136.....	do	-----	-----	76,720
110.....	do	-----	-----	32,600	139.....	do	-----	99,707	-----
113.....	June 13, 1925	-----	-----	76,570	-----	-----	-----	-----	-----

FROM BETHLEHEM, PA.

143.....	July 2, 1925	44,234	-----	-----	246.....	Oct. 6, 1925	30,871	23,979	-----
144.....	do	6,403	19,540	-----	247.....	do	26,534	14,567	-----
155.....	July 6, 1925	-----	49,790	-----	248.....	Oct. 7, 1925	-----	66,855	-----
156.....	do	38,588	-----	-----	249.....	do	693	37,083	-----
167.....	July 8, 1925	34,157	13,061	-----	250.....	Oct. 8, 1925	-----	67,462	-----
168.....	do	23,433	10,674	-----	251.....	Oct. 9, 1925	-----	96,488	-----
169.....	July 10, 1925	-----	-----	1 37,363	252.....	Oct. 13, 1925	-----	85,800	-----
171.....	do	16,299	5,900	-----	253.....	do	-----	71,601	-----
177.....	July 13, 1925	43,546	4,353	-----	254.....	do	-----	70,755	-----
179.....	July 14, 1925	41,902	-----	-----	255.....	Oct. 15, 1925	5,250	68,116	-----
182.....	do	-----	81,384	-----	256.....	do	681	31,921	-----
188.....	July 22, 1925	-----	75,420	-----	259.....	Oct. 17, 1925	22,400	48,552	-----
189.....	do	-----	70,020	-----	261.....	Oct. 20, 1925	-----	68,872	-----
190.....	July 23, 1925	-----	69,432	-----	262.....	Oct. 24, 1925	22,050	46,620	-----
191.....	do	-----	63,648	-----	263.....	Oct. 27, 1925	5,823	58,820	-----
194.....	July 29, 1925	46,913	2,060	-----	264.....	Oct. 28, 1925	49,420	12,000	-----
195.....	July 30, 1925	-----	64,176	-----	264-a	Nov. 5, 1925	28,753	42,690	-----
196.....	Aug. 6, 1925	-----	72,030	-----	265.....	do	18,474	2,660	-----
197.....	Aug. 12, 1925	17,150	43,806	-----	266.....	Nov. 6, 1925	51,975	23,730	-----
198.....	Aug. 18, 1925	36,786	1,890	-----	267.....	Nov. 9, 1925	-----	-----	1 21,237
199.....	do	-----	-----	1 58,087	270.....	Nov. 12, 1925	14,100	63,507	-----
200.....	Aug. 19, 1925	30,291	21,990	-----	271.....	Nov. 14, 1925	-----	65,580	-----
201.....	do	12,953	40,617	-----	274.....	Nov. 20, 1925	-----	48,382	-----
202.....	Aug. 20, 1925	29,947	28,062	-----	275.....	Nov. 21, 1925	62,720	16,695	-----
204.....	Aug. 22, 1925	-----	55,159	-----	276.....	do	26,512	25,384	-----
205.....	Aug. 24, 1925	4,380	81,324	-----	277.....	do	-----	-----	1 54,408
206.....	do	49,307	13,825	-----	278.....	Nov. 28, 1925	-----	61,150	-----
208.....	Aug. 25, 1925	47,044	5,454	-----	279.....	do	41,424	14,534	-----
209.....	do	-----	26,603	-----	280.....	do	38,474	16,547	-----
212.....	Aug. 26, 1925	-----	71,928	-----	281.....	Nov. 30, 1925	65,835	10,530	-----
213.....	Aug. 27, 1925	44,292	11,223	-----	282.....	do	10,039	33,328	-----
214.....	do	31,750	11,184	-----	283.....	do	5,699	34,421	-----
215.....	Sept. 1, 1925	36,406	23,457	-----	284.....	do	3,300	17,207	-----
216.....	Sept. 3, 1925	-----	84,216	-----	285.....	Dec. 2, 1925	-----	101,710	-----
217.....	Sept. 7, 1925	30,747	23,531	-----	286.....	do	6,161	55,432	-----
219.....	Sept. 9, 1925	21,188	17,580	-----	287.....	do	28,589	10,382	-----
220.....	do	-----	35,123	-----	288.....	Dec. 4, 1925	63,996	4,056	-----
221.....	Sept. 11, 1925	29,374	17,929	-----	289.....	do	13,662	24,675	-----
223.....	do	7,350	94,301	-----	290.....	Dec. 8, 1925	43,957	4,737	-----
224.....	do	7,606	39,902	-----	291.....	Dec. 9, 1925	10,220	30,142	-----
226.....	Sept. 12, 1925	25,802	32,710	-----	292.....	Dec. 10, 1925	19,951	21,350	-----
228.....	Sept. 14, 1925	49,997	9,618	-----	293.....	Dec. 11, 1925	5,483	68,837	-----
229.....	Sept. 15, 1925	5,640	58,114	-----	296.....	Dec. 12, 1925	6,507	44,445	-----
230.....	Sept. 16, 1925	14,861	22,955	-----	297.....	Dec. 14, 1925	34,300	29,952	-----
234.....	Sept. 18, 1925	33,024	6,390	-----	298.....	Dec. 18, 1925	2,153	40,870	-----
236.....	do	33,825	8,645	-----	299.....	do	1,891	39,847	-----
237.....	Sept. 21, 1925	25,675	28,734	-----	300.....	Dec. 21, 1925	11,455	49,200	-----
241.....	Sept. 28, 1925	-----	72,041	-----	301.....	Dec. 22, 1925	-----	58,366	-----
242.....	Oct. 1, 1925	35,705	13,107	-----	302.....	Dec. 28, 1925	23,977	4,491	-----
243.....	Oct. 2, 1925	1,710	63,462	-----	303.....	do	23,160	40,400	-----

FROM LACKAWANNA, N. Y.

145.....	July 2, 1925	-----	-----	3,810	294.....	Dec. 12, 1925	-----	-----	103,530
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CONCENTRATION OF ECONOMIC POWER

FROM JOHNSTOWN, PA.

Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates	Page No.	Invoice date	Bethlehem specials	Standard shapes	Plates
146.....	July 2, 1925	-----	-----	154,370	186.....	July 16, 1925	-----	-----	115,030
148.....	do	-----	-----	154,400	192.....	July 25, 1925	-----	-----	99,640
149.....	July 3, 1925	-----	-----	150,650	210.....	Aug. 25, 1925	-----	-----	39,930
151.....	do	-----	-----	141,670	211.....	do	-----	-----	23,300
153.....	do	-----	114,938	-----	232.....	Sept. 17, 1925	-----	68,418	-----
157.....	July 6, 1925	-----	-----	102,370	233.....	do	-----	43,050	-----
160.....	do	-----	97,722	-----	238.....	Sept. 23, 1925	-----	-----	29,540
161.....	do	-----	93,822	-----	239.....	do	-----	84,430	-----
163.....	July 7, 1925	-----	49,470	-----	244.....	Oct. 5, 1925	-----	-----	39,060
164.....	do	-----	-----	129,780	245.....	do	-----	15,996	-----
165.....	July 8, 1925	-----	57,315	-----	257.....	Oct. 15, 1925	-----	-----	20,530
172.....	July 10, 1925	-----	-----	155,280	258.....	Oct. 16, 1925	-----	-----	23,010
174.....	do	-----	52,713	-----	260.....	Oct. 19, 1925	-----	-----	75,270
176.....	July 11, 1925	-----	-----	156,260	268.....	Nov. 10, 1925	-----	17,250	-----
180.....	July 14, 1925	-----	-----	124,440	269.....	do	-----	-----	46,930
183.....	July 15, 1925	-----	-----	58,780	272.....	Nov. 17, 1925	-----	78,716	-----
184.....	do	-----	65,448	-----	273.....	do	-----	17,287	-----
185.....	do	-----	53,415	-----					

FROM BETHLEHEM, PA.

1.....	Jan. 2, 1926	27,693	10,080	-----	59.....	Mar. 5, 1926	-----	59,900	-----
2.....	Jan. 4, 1926	31,185	45,940	-----	61.....	Mar. 8, 1926	57,220	7,540	-----
3.....	Jan. 6, 1926	25,505	12,071	-----	69.....	Mar. 13, 1926	54,192	-----	-----
4.....	Jan. 8, 1926	45,451	-----	-----	70.....	do	11,603	54,120	-----
8.....	Jan. 16, 1926	33,016	5,045	-----	82.....	Mar. 22, 1926	51,113	14,680	-----
9.....	Jan. 23, 1926	32,746	6,834	-----	85.....	Mar. 24, 1926	60,675	3,185	-----
12.....	Jan. 29, 1926	42,900	6,800	-----	87.....	Mar. 29, 1926	33,653	36,480	-----
13.....	Feb. 2, 1926	-----	-----	2 30,855	104.....	Apr. 6, 1926	-----	-----	1 29,643
14.....	do	18,970	5,044	-----	105.....	Apr. 7, 1926	38,535	32,592	-----
21.....	Feb. 5, 1926	70,328	14,599	-----	107.....	Apr. 9, 1926	56,837	7,380	-----
26.....	do	-----	-----	1 74,734	111.....	Apr. 12, 1926	74,747	9,553	-----
32.....	Feb. 16, 1926	42,948	2,081	-----	121.....	Apr. 17, 1926	-----	-----	2 35,786
33.....	Feb. 17, 1926	36,383	30,930	-----	126.....	Apr. 20, 1926	35,668	26,620	-----
35.....	Feb. 18, 1926	-----	-----	1 42,941	130.....	Apr. 26, 1926	54,218	12,444	-----
36.....	Feb. 20, 1926	38,188	26,520	-----	145.....	May 8, 1926	57,627	790	-----
37.....	Feb. 22, 1926	31,698	9,892	-----	151.....	May 15, 1926	37,057	345	-----
39.....	Feb. 24, 1926	40,365	39,694	-----	152.....	May 17, 1926	53,343	12,530	-----
43.....	Feb. 25, 1926	4,485	56,012	-----	154.....	May 24, 1926	62,040	23,785	-----
44.....	Feb. 26, 1926	-----	59,200	-----	155.....	May 27, 1926	-----	-----	1 17,835
49.....	Mar. 2, 1926	30,707	14,865	-----	160.....	June 23, 1926	64,091	10,890	-----
56.....	Mar. 4, 1926	76,113	12,960	-----					

¹ Shipments from Sparrows Point, Mo. — Plates not produced at Bethlehem.

² Shipments from Coatesville, Pa.

FROM LACKAWANNA, N. Y.

10.....	Jan. 26, 1926	-----	50,720	92.....	Apr. 1, 1926	-----	-----	66,910
15.....	Feb. 4, 1926	-----	49,055	94.....	do	-----	63,997	-----
17.....	Feb. 5, 1926	-----	45,605	97.....	Apr. 5, 1926	-----	72,394	-----
19.....	do	-----	90,271	106.....	Apr. 8, 1926	-----	80,952	-----
23.....	Feb. 8, 1926	-----	60,457	108.....	Apr. 10, 1926	-----	43,049	-----
24.....	do	-----	62,560	112.....	Apr. 13, 1926	-----	73,224	-----
27.....	Feb. 13, 1926	-----	80,728	119.....	Apr. 17, 1926	-----	120,936	-----
30.....	Feb. 15, 1926	-----	54,520	122.....	Apr. 19, 1926	-----	79,410	-----
34.....	Feb. 18, 1926	-----	115,768	127.....	Apr. 20, 1926	-----	62,435	-----
40.....	Feb. 25, 1926	-----	73,380	129.....	Apr. 23, 1926	-----	104,412	-----
42.....	do	-----	94,375	131.....	Apr. 26, 1926	-----	37,579	-----
45.....	Mar. 1, 1926	-----	116,863	136.....	do	-----	-----	31,910
46.....	do	-----	37,902	138.....	Apr. 28, 1926	-----	80,397	-----
51.....	Mar. 3, 1926	-----	64,392	139.....	Apr. 29, 1926	-----	-----	90,910
57.....	Mar. 4, 1926	-----	44,005	142.....	May 1, 1926	-----	82,861	-----
60.....	Mar. 8, 1926	-----	107,363	144.....	May 4, 1926	-----	61,089	-----
62.....	do	-----	73,070	147.....	May 10, 1926	-----	-----	87,035
65.....	Mar. 12, 1926	-----	70,930	149.....	May 14, 1926	-----	92,714	-----
71.....	Mar. 15, 1926	-----	103,119	153.....	May 22, 1926	-----	119,972	-----
73.....	Mar. 17, 1926	-----	31,990	156.....	May 31, 1926	-----	112,809	-----
75.....	do	-----	15,349	158.....	June 19, 1926	-----	123,500	-----
76.....	Mar. 18, 1926	-----	75,560	161.....	June 24, 1926	-----	78,060	-----
77.....	Mar. 20, 1926	-----	81,942	163.....	July 12, 1926	-----	161,163	-----
80.....	Mar. 21, 1926	-----	47,115	165.....	July 15, 1926	-----	60,856	-----
83.....	Mar. 24, 1926	-----	65,825	166.....	July 21, 1926	-----	66,935	-----
86.....	Mar. 29, 1926	-----	-----	168.....	July 27, 1926	-----	68,216	-----
88.....	do	-----	45,674	170.....	July 28, 1926	-----	62,375	-----

FROM JOHNSTOWN, PA.

6.....	Jan. 11, 1925	-----	13,375	22.....	Feb. 6, 1926	-----	90,560	-----
6.....	do	-----	30,420	29.....	Feb. 13, 1926	-----	-----	38,200
7.....	do	-----	24,306	96.....	Apr. 1, 1926	-----	-----	40,920

EXHIBIT 26

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET NO. 962

UNIFORM VALUATION OF PRODUCTS BY BETHLEHEM STEEL CO.

The following is a partial abstract of invoices rendered by Bethlehem Steel Co. against Whitehead & Kales Co., Detroit, Mich., during the first 6 months of the year 1926, showing substantial shipments of standard structural shapes from Lackawanna, N. Y., and Bethlehem, Pa.; also plates from Lackawanna, N. Y., and Johnstown, Pa.

The tabulation also shows the prices at which these forms were sold, "freight allowed to Detroit," and that a uniform valuation was placed upon the products of the different mills which was the Pittsburgh equivalent of \$1.85 and \$1.80 per hundredweight on structural shapes and plates, respectively, the freight rate from Pittsburgh being 29 cents per hundredweight.

STANDARD STRUCTURAL SHAPES

Exhibit No.	Invoice date	From Lackawanna, N. Y.	From Bethlehem, Pa.	From Johnstown, Pa.	Price delivered at Detroit
24314	Jan. 25, 1926		40,400		\$2.14
24315	Jan. 26, 1926		48,600		2.14
24316	do		47,100		2.14
24317	Jan. 28, 1926		14,400		2.14
24319	Jan. 29, 1926	94,860			2.14
24320	do	67,620			2.14
24321	Feb. 2, 1926	80,190			2.14
24324	Feb. 5, 1926	48,600			2.14
24324-a	do	13,907			2.14
24325	Feb. 8, 1926		17,400		2.14
24327	Feb. 9, 1926		35,868		2.14
24328	Feb. 10, 1926		76,820		2.14
24329	Feb. 11, 1926				2.14
24330	do	36,900			2.14
24331	do	27,540			2.14
24332	Feb. 12, 1926	36,900			2.14
24333	do	46,240			2.14
24335	do	24,650			2.14
24335	Feb. 13, 1926		39,960		2.14
24337	Feb. 15, 1926		9,300		2.14
24338	Feb. 16, 1926	34,700			2.14
24339	Feb. 18, 1926	26,100			2.14
24341	Feb. 19, 1926	7,202			2.14
24342	do	72,000			2.14
24343	do	29,400			2.14
24344	do		21,600		2.14
24345	Feb. 20, 1926		71,106		2.14
24346	do		67,800		2.14
24347	Feb. 23, 1926	35,100			2.14
24348	do	45,900			2.14
24349	do	10,510			2.14
24350	do	5,615			2.14
24352	Feb. 27, 1926		33,000		2.14
24353	do		82,053		2.14
25354	Mar. 1, 1926		31,355		2.14
24354	Mar. 2, 1926	102,960			2.14
24356	Mar. 4, 1926	34,048			2.14
24362	Mar. 5, 1926	40,680			2.14
24363	do	35,000			2.14
24364	Mar. 6, 1926	26,426			2.14
24365	do	12,891			2.14
24366	do		5,151		2.14
24367	Mar. 8, 1926		21,504		2.14
24368	do	10,425			2.14
24369	Mar. 10, 1926		74,832		2.14
24371	Mar. 11, 1926		10,921		2.14
24373	Mar. 13, 1926	8,330			2.14
24374	do	40,200			2.14
24376	Mar. 16, 1926			66,898	2.14
24377	Mar. 17, 1926	55,200			2.14
24379	do	22,848			2.14
24380	Mar. 19, 1926	19,906			2.14
24382	do	39,900			2.14
24383	do	30,480			2.14
24384	do	37,260			2.14
24385	Mar. 20, 1926	10,351			2.14
24386	do	49,680			2.14
24389	Mar. 24, 1926	51,168			2.14
24390	do	47,908			2.14
24394	Mar. 30, 1926		76,800		2.14
24396	Mar. 31, 1926		33,600		2.14
24398	do		60,600		2.14

STANDARD STRUCTURAL SHAPES—Continued

Exhibit No.	Invoice date	From Lackawanna, N. Y.	From Bethlehem, Pa.	From Johnstown, Pa.	Price delivered at Detroit
24400	Apr. 2, 1926		29,400		2.14
24401	do		65,706		2.14
24405	Apr. 9, 1926	11,979			2.14
24407	do	31,200			2.14
24408	do	40,712			2.14
24410	Apr. 12, 1926		43,500		2.14
24411	do		60,600		2.14
24414	Apr. 15, 1926		24,600		2.14
24415	Apr. 19, 1926	89,700			2.14
24416	do	34,500			2.14
24418	Apr. 20, 1926		25,500		2.14
24419	Apr. 20, 1926	9,909			2.14
24420	do	11,850			2.14
24421	do		63,270		2.14
24423	do		53,130		2.14
24424	Apr. 21, 1926			96,970	2.14
24425	do		49,200		2.14
24427	Apr. 29, 1926	3,320			2.14
24430	Apr. 30, 1926	86,580			2.14
24433	May 1, 1926	40,960			2.14
24434	do	30,480			2.14
24435	May 3, 1926	36,720			2.14
24436	do	52,320			2.14
24439	May 5, 1926	37,500			2.14
24441	do	34,698			2.14
24445	May 7, 1926		56,700		2.14
24446	do		41,250		2.14
24447	May 8, 1926		11,850		2.14
24448	May 10, 1926	16,974			2.14
24449	do	53,158			2.14
24450	do	43,050			2.14
24452	do	3,500			2.14
24453	do	35,540			2.14
24456	May 14, 1926	42,336			2.14
24457	do	40,200			2.14
24458	do	25,500			2.14
24459	do	27,048			2.14
24460	May 15, 1926	20,202			2.14
24461	do	44,160			2.14
24463	May 18, 1926	34,500			2.14
24464	do	62,400			2.14
24465	do	16,464			2.14
24467	May 19, 1926	77,220			2.14
24468	do	34,500			2.14
24469	do	31,200			2.14
24470	May 21, 1926		53,874		2.14
24471	do			52,780	2.14
24472	May 22, 1926	49,680			2.14
24473	do	11,925			2.14
24474	do	57,240			2.14
24475	do		27,000		2.14
24476	do		13,860		2.14
24478	May 27, 1926	26,082			2.14
24479	do	62,100			2.14
24480	May 28, 1926	60,755			2.14
24481	June 1, 1926	137,499			2.14
24482	June 2, 1926	126,606			2.14
24483	June 4, 1926	39,438			2.14
24485	June 5, 1926	99,900			2.14
24486	June 9, 1926	58,500			2.14
24490	June 19, 1926	24,600			2.14
24491	do	24,600			2.14

PLATES

24375	Mar. 15, 1926			141,120	2.09
24393	Mar. 29, 1926	47,215			2.09
24395	Mar. 30, 1926			117,780	2.09
24397	Mar. 31, 1926	60,100			2.09
24399	Apr. 1, 1926			40,350	2.09
24402	Apr. 3, 1926			153,820	2.09
24403	Apr. 6, 1926			134,150	2.09
24404	Apr. 8, 1926			106,280	2.09
24406	Apr. 9, 1926	35,065			2.09
24429	Apr. 29, 1926	28,630			2.09
24431	Apr. 30, 1926	67,220			2.09
24432	do	10,210			2.09
24438	May 5, 1926	86,970			2.09
24451	May 10, 1926	61,500			2.09
24454	do	36,375			2.09

EXHIBIT 27

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET NO. 962

The following is an abstract from the rolling schedules and stock lists issued by Bethlehem Steel Co. and Cambria Steel Co. which are contained in the record herein showing certain sizes and forms of standard structural shapes (including bar sizes) manufactured or carried in stock and offered for sale by both companies prior to the acquisition by Bethlehem Steel Co. of the properties of Cambria Steel Co. as shown by the following Commission's exhibits Nos. 4654, 4658, 15041, 17901, 17902, 17903, 17904, 17904½, 17905 to 17908, inclusive, 12727 to 12736, inclusive, 12983 to 12992, inclusive, 12578, and 12729.

Beams	Channels	Ship channels	Angles—equal legs	Angles—unequal legs	Bulb angles
3 by 5.7 pounds. 3 by 6.5 pounds. 3 by 7.5 pounds. 4 by 7.7 pounds. 4 by 8.5 pounds. 4 by 9.5 pounds. 4 by 10.5 pounds. 5 by 10.5 pounds. 5 by 12.25 pounds. 5 by 12.5 pounds. 6 by 12.5 pounds. 7 by 12.5 pounds. 7 by 13.5 pounds. 7 by 15.3 pounds. 7 by 17.5 pounds. 8 by 18.4 pounds. 9 by 21.8 pounds. 9 by 25.0 pounds. 9 by 30.0 pounds. 9 by 35.0 pounds. 10 by 35.4 pounds. 10 by 35.6 pounds. 10 by 40.0 pounds. 12 by 31.8 pounds. 12 by 35.8 pounds. 12 by 40.8 pounds. 12 by 45.0 pounds. 12 by 50.0 pounds. 15 by 42.9 pounds. 15 by 50.0 pounds. 15 by 55.0 pounds. 15 by 60.0 pounds. 15 by 70.0 pounds. 15 by 80.0 pounds. 18 by 54.7 pounds.	3 by 4.1 pounds. 3 by 5.0 pounds. 3 by 6.0 pounds. 4 by 5.4 pounds. 4 by 6.25 pounds. 4 by 7.25 pounds. 5 by 6.7 pounds. 5 by 9.0 pounds. 5 by 11.5 pounds. 6 by 10.5 pounds. 6 by 13.0 pounds. 6 by 15.0 pounds. 7 by 9.8 pounds. 7 by 12.25 pounds. 7 by 14.75 pounds. 7 by 17.25 pounds. 7 by 19.75 pounds. 9 by 13.4 pounds. 9 by 15.0 pounds. 9 by 20.0 pounds. 9 by 25.0 pounds. 10 by 15.3 pounds. 10 by 20.0 pounds. 10 by 25.0 pounds. 10 by 30.0 pounds. 12 by 35.0 pounds. 12 by 20.7 pounds. 12 by 25.0 pounds. 12 by 30.0 pounds. 12 by 35.0 pounds. 12 by 40.0 pounds. 15 by 33.9 pounds. 15 by 35.0 pounds.	7 by 18.9 pounds. 8 by 21.2 pounds. 9 by 28.3 pounds. 10 by 21.7 pounds. 10 by 24.6 pounds. 10 by 26.3 pounds. 12 by 30.6 pounds. 12 by 32.7 pounds. 12 by 36.8 pounds. 12 by 40.8 pounds.	2 by 2 by ¾ inches. 2 by 2 by 1 inches. 2 by 2 by 1 ¼ inches. 2 by 2 by 1 ½ inches. 2½ by 2½ by ¾ inches. 2½ by 2½ by ¾ inches. 2½ by 2½ by ¾ inches. 2½ by 2½ by ¾ inches. 2½ by 2½ by ¾ inches. 2½ by 2½ by ¾ inches. 3 by 3 by ¾ inches. 3 by 3 by ¾ inches. 3 by 3 by ¾ inches. 3 by 3 by ¾ inches. 3½ by 3½ by 8.5 pounds. 3½ by 3½ by 9.8 pounds. 3½ by 3½ by 11.1 pounds. 3½ by 3½ by 12.4 pounds. 3½ by 3½ by 13.6 pounds. 4 by 4 by 8.2 pounds. 4 by 4 by 9.8 pounds. 4 by 4 by 12.8 pounds. 4 by 4 by 14.3 pounds. 4 by 4 by 15.7 pounds. 5 by 5 by 12.3 pounds. 5 by 5 by 14.3 pounds. 5 by 5 by 16.2 pounds. 5 by 5 by 18.1 pounds. 6 by 6 by 14.9 pounds. 6 by 6 by 17.2 pounds. 6 by 6 by 19.6 pounds. 6 by 6 by 21.9 pounds. 6 by 6 by 24.2 pounds.	2½ by 2 by 1 ¼ inches. 2½ by 2 by 1 ½ inches. 3 by 2 by 1 ¼ inches. 3 by 2 by 1 ½ inches. 3 by 2½ by ¾ inches. 3 by 2½ by ¾ inches. 3 by 2½ by ¾ inches. 3½ by 2½ by ¾ inches. 3½ by 2½ by ¾ inches. 3½ by 2½ by ¾ inches. 3½ by 2½ by ¾ inches. 3½ by 2½ by ¾ inches. 3½ by 2½ by ¾ inches. 3½ by 2½ by ¾ inches. 3½ by 3 by ¾ inches. 3½ by 3 by ¾ inches. 3½ by 3 by ¾ inches. 3½ by 3 by ¾ inches. 3½ by 3 by ¾ inches. 4 by 3 by ¾ inches. 4 by 3 by ¾ inches. 4 by 3 by ¾ inches. 4 by 3½ by ¾ inches. 4 by 3½ by ¾ inches. 4 by 3½ by ¾ inches. 4 by 3½ by ¾ inches. 4 by 3½ by ¾ inches. 5 by 3 by ¾ inches. 5 by 3 by ¾ inches. 5 by 3 by ¾ inches. 5 by 3 by ¾ inches. 5 by 3 by 15.7 inches. 5 by 3 by 18.5 inches. 6 by 3½ by 8.7 inches.	6 by 3½ by 14.1 pounds. 7 by 3½ by 15.3 pounds. 9 by 3½ by 24.8 pounds. 10 by 3½ by 26.9 pounds.

Beams	Channels	Ship channels	Angles—equal legs	Angles—unequal legs	Bulb angles
18 by 60.0 pounds. 18 by 70.0 pounds. 20 by 65.4 pounds. 20 by 75.0 pounds. 20 by 81.4 pounds. 20 by 90.0 pounds. 20 by 100.0 pounds. 24 by 79.9 pounds. 24 by 100.0 pounds.	15 by 45.0 pounds. 15 by 50.0 pounds. 15 by 55.0 pounds.		6 by 6 by 26.5 pounds. 6 by 6 by 28.7 pounds. 6 by 6 by 33.3 pounds. 6 by 6 by 37.4 pounds. 8 by 8 by 32.7 pounds. 8 by 8 by 35.8 pounds. 8 by 8 by 38.9 pounds. 8 by 8 by 42.0 pounds. 8 by 8 by 45.0 pounds. 8 by 8 by 51.0 pounds. 8 by 8 by 56.9 pounds.	5 by 3½ by 10.4 inches. 5 by 3½ by 12.0 inches. 5 by 3½ by 13.6 inches. 5 by 3½ by 15.2 inches. 5 by 3½ by 16.8 inches. 5 by 3½ by 18.4 inches. 6 by 3½ by 11.7 inches. 6 by 3½ by 13.5 inches. 6 by 3½ by 17.1 inches. 6 by 3½ by 18.9 inches. 6 by 3½ by 20.6 inches. 6 by 3½ by 22.4 inches. 6 by 4 by 12.3 inches. 6 by 4 by 14.3 inches. 6 by 4 by 16.2 inches. 6 by 4 by 18.1 inches. 6 by 4 by 20.0 inches. 6 by 4 by 23.6 inches. 6 by 4 by 25.4 inches. 6 by 4 by 27.2 inches. 6 by 4 by 30.6 inches. 7 by 3½ by 15.0 inches. 7 by 3½ by 17.0 inches. 7 by 3½ by 19.1 inches. 7 by 3½ by 21.0 inches. 7 by 3½ by 24.9 inches. 8 by 6 by 23.0 inches. 8 by 6 by 25.5 inches. 8 by 6 by 33.8 inches. 8 by 6 by 44.2 inches.	

EXHIBIT 28

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

The following is an incomplete tabulation of invoices rendered against Whitehead & Kales Co., Detroit, Mich., by the following producers, covering materials furnished on certain specific orders during the periods mentioned, which invoices show shipments of substantial quantities of exactly the same character and size by both companies: By Cambria Steel Co., year 1917; by Bethlehem Steel Co., years 1919-20.

SHIPPED BY CAMBRIA STEEL CO.

Exhibit No.	Invoice date	Form of product		
		Plates	Shapes	Bars
24904.	Mar. 2, 1917.	72, 120		
24905.	do.	77, 300		
24906.	Mar. 26, 1917.	27, 830		
24907.	do.	151, 380	10, 890	2, 930
24908.	Apr. 6, 1917.	77, 340		
24909.	Apr. 7, 1917.	112, 270		3, 315
24910.	Apr. 30, 1917.	104, 260		
24911.	May 2, 1917.	47, 710		1, 470
24912.	May 3, 1917.		103, 089	
24913.	May 5, 1917.	29, 450		
24914.	do.	59, 550	3, 940	6, 200
24915.	May 23, 1917.	89, 790		
24916.	May 29, 1917.	44, 430		25, 420
24917.	do.	59, 210		
24918.	June 7, 1917.	4, 550		
24919.	do.	65, 030		12, 760
24920.	June 9, 1917.		147, 921	
24921.	do.		107, 796	
24922.	June 21, 1917.	44, 470		2, 800
24923.	June 29, 1917.		42, 475	
24924.	do.		49, 215	
24925.	June 30, 1917.	67, 100		29, 950
24926.	July 9, 1917.		147, 302	
24927.	July 10, 1917.	70, 870		24, 455
24928.	July 14, 1917.		46, 746	
24929.	do.	49, 720		1, 840
24930.	July 31, 1917.	57, 520		
24931.	do.	540		
24932.	Aug. 7, 1917.		59, 585	
24933.	Aug. 17, 1917.		79, 466	
24934.	do.		90, 649	
24935.	do.		75, 972	
24936.	Aug. 18, 1917.	3, 540		
24937.	Aug. 22, 1917.		92, 175	3, 500
24938.	do.		64, 216	
24939.	Aug. 25, 1917.		64, 400	10, 970
24940.	do.			700
24941.	Aug. 27, 1917.		61, 769	
24942.	Aug. 28, 1917.	23, 540		36, 170
24943.	Aug. 31, 1917.	43, 670	5, 790	
24944.	Sept. 7, 1917.	83, 330		
24945.	Sept. 10, 1917.		115, 327	
24946.	Sept. 22, 1917.	131, 200		160
24947.	Sept. 29, 1917.	172, 400	29, 010	
24948.	Oct. 12, 1917.		158, 597	660
24949.	Oct. 13, 1917.		80, 655	
24950.	do.	61, 590		
24951.	Oct. 15, 1917.		211, 947	
24952.	do.		131, 779	
24953.	Oct. 18, 1917.		98, 442	13, 470
24954.	Nov. 19, 1917.		42, 745	370
24955.	Nov. 23, 1917.	111, 310		107
24956.	Nov. 26, 1917.	69, 750	128, 649	1, 280
24957.	Nov. 30, 1917.		52, 789	
24958.	do.	27, 630	56, 049	
24959.	Dec. 20, 1917.		52, 045	280
24960.	Mar. 30, 1918.	38, 650		

SHIPPED BY BETHLEHEM STEEL CO.

Exhibit No.	Invoice date	Form of product			
		Bethlehem specials	Plates	Standard shapes	Bars
24961	Jan. 18, 1919	50, 423		2, 214	
24962	Feb. 10, 1919			49, 300	
24963	Feb. 17, 1919	27, 760		10, 500	
24964	Mar. 6, 1919	3, 600		42, 840	
24965	Mar. 25, 1919	8, 677		36, 121	
24966	Mar. 26, 1919	17, 100		31, 260	
24967	Apr. 8, 1919	53, 539		8, 190	
24968	Apr. 11, 1919	56, 955		29, 530	
24969	Apr. 15, 1919	45, 500		31, 200	
24970	Apr. 19, 1919			76, 560	
24971	Apr. 22, 1919	51, 100		45, 000	
24972	Apr. 23, 1919			67, 680	
24973	Apr. 24, 1919			68, 220	
24974	May 2, 1919	35, 295		28, 170	
24975	May 6, 1919			102, 080	
24976	May 7, 1919	43, 650		27, 000	
24977	May 9, 1919	34, 200		60, 396	
24978	May 10, 1919	43, 800		42, 030	
24979	May 17, 1919			112, 614	
24980	May 19, 1919			37, 935	
24981	May 21, 1919			89, 308	
24982	May 23, 1919			88, 866	
24983	May 28, 1919	53, 100		19, 581	
24984	May 31, 1919			56, 940	
24985	June 4, 1919	34, 243		8, 400	
24986	June 5, 1919	43, 951		9, 261	
24987	June 7, 1919	35, 562		10, 360	
24988	June 10, 1919			60, 075	
24989	June 12, 1919	46, 800		14, 700	
24990	June 13, 1919	9, 750		36, 900	
24991	June 14, 1919	26, 477		18, 940	
24992	June 18, 1919			81, 636	
24993	June 19, 1919	3, 392		45, 450	
24994	June 24, 1919			57, 204	
24995	July 1, 1919	26, 225		32, 960	
24996	July 10, 1919			43, 305	
24997	July 17, 1919	35, 100		35, 556	
24998	July 31, 1919	42, 695		4, 325	
24999	Aug. 25, 1919	14, 700		59, 760	
25000	Aug. 27, 1919			101, 850	
25001	Aug. 28, 1919	27, 886		29, 939	
25002	Aug. 30, 1919			79, 686	
25003	do	24, 840		14, 612	
25004	Sept. 2, 1919			86, 424	
25005	do	38, 400		6, 017	
25006	Sept. 4, 1919	43, 979		16, 021	
25007	Sept. 5, 1919			96, 150	
25008	Sept. 8, 1919			90, 750	
25009	Sept. 12, 1919			61, 381	
25010	do			147, 595	
25011	Sept. 16, 1919			99, 354	
25012	Sept. 17, 1919	66, 000		16, 308	
25013	Sept. 18, 1919	27, 320		8, 702	
25014	Sept. 20, 1919			90, 000	
25015	Sept. 23, 1919			64, 500	
25016	Sept. 26, 1919			90, 915	
25017	Sept. 27, 1919	40, 620		8, 585	
25018	Oct. 4, 1919	54, 300		33, 980	
25019	Oct. 6, 1919	54, 577		2, 149	
25020	Oct. 10, 1919	27, 000		70, 560	
25021	Oct. 13, 1919	37, 729		11, 650	
25022	do	17, 170		24, 540	
25023	Oct. 14, 1919			94, 194	
25024	Oct. 15, 1919			80, 760	
25025	Oct. 16, 1919			36, 490	
25026	Oct. 18, 1919			46, 205	
25027	do	30, 043		11, 153	
25028	Oct. 20, 1919			88, 279	
25029	do	30, 391		22, 360	
25030	do	70, 165		14, 942	
25031	Oct. 20, 1919			97, 260	
25032	Oct. 21, 1919	58, 800		18, 720	
25033	do	27, 223		11, 325	
25034	Oct. 24, 1919			86, 088	
25035	do			77, 726	
25036	Oct. 25, 1919			79, 980	
25037	Oct. 28, 1919	12, 676		21, 684	
25038	Oct. 29, 1919			47, 250	

SHIPPED BY BETHLEHEM STEEL CO.—Continued

Exhibit No.	Invoice date	Form of product			
		Bethlehem specials	Plates	Standard shapes	Bars
25039	Oct. 31, 1919			69, 138	
25040	Nov. 3, 1919	52, 440		25, 518	
25041	Nov. 5, 1919	15, 960		87, 255	
25042	do			75, 600	
25043	Nov. 6, 1919	11, 818		34, 208	
25044	Nov. 7, 1919			73, 740	
25045	Nov. 10, 1919			50, 513	
25046	Nov. 11, 1919			87, 606	
25047	Nov. 12, 1919			20, 664	
25048	do	64, 830		50, 688	
25049	do	29, 040		48, 192	
25050	Nov. 13, 1919	72, 990		23, 700	
25051	Nov. 19, 1919	62, 680		49, 910	
25052	do	5, 280		69, 954	
25053	Nov. 25, 1919	18, 480		54, 000	
25054	Nov. 26, 1919	15, 503		41, 642	
25055	Nov. 29, 1919			54, 920	
25056	do	38, 577		18, 100	
25057	Dec. 5, 1919			72, 696	
25058	Dec. 12, 1919			58, 180	
25059	Dec. 18, 1919			36, 493	
25060	Dec. 24, 1919			59, 208	
25061	Dec. 30, 1919	51, 034		1, 908	
25062	do			57, 750	
25063	Jan. 8, 1920			118, 170	
25064	do			62, 419	
25065	Jan. 21, 1920	12, 600		55, 980	
25066	Jan. 23, 1920			81, 000	
25067	Jan. 30, 1920	51, 450		16, 800	
25068	Feb. 5, 1920			65, 020	
25069	Feb. 18, 1920			43, 320	
25070	Feb. 23, 1920			78, 310	
25071	Feb. 27, 1920	22, 050		65, 670	
25072	Mar. 1, 1920	2, 893		58, 396	
25073	Mar. 6, 1920	22, 800		13, 210	
25074	Mar. 10, 1920	1, 746		73, 680	
25075	Mar. 12, 1920			70, 200	
25076	Mar. 16, 1920			84, 022	
25077	Mar. 31, 1920	72, 480		34, 499	
25078	do			93, 505	
25079	Apr. 1, 1920	12, 460		36, 780	
25080	Apr. 7, 1920			59, 765	
25081	May 8, 1920			62, 100	
25082	May 11, 1920			47, 580	
25083	May 17, 1920			62, 149	
25084	June 4, 1920	65, 700		29, 400	
25085	June 8, 1920			27, 100	
25086	June 12, 1920	15, 457		21, 233	
25087	June 17, 1920			60, 000	
25088	July 9, 1920	2, 345		79, 050	
25089	July 13, 1920			65, 040	
25090	July 14, 1920			69, 840	
25091	July 19, 1920			108, 912	
25092	July 21, 1920			100, 800	
25093	July 27, 1920			81, 360	
25094	July 28, 1920	11, 691		76, 440	
25095	Aug. 3, 1920			70, 560	
25096	Aug. 7, 1920			36, 475	
25097	Aug. 14, 1920			71, 615	
25098	do			137, 025	
25099	Aug. 17, 1920			86, 640	
25100	Aug. 28, 1920			40, 020	
25101	Sept. 11, 1920			61, 500	
25102	Sept. 13, 1920				747
25103	do			49, 200	
25104	Sept. 14, 1920			49, 185	
25105	do			60, 048	
25106	Sept. 15, 1920			68, 580	
25107	Sept. 16, 1920			44, 515	
25108	do			70, 190	
25109	do			44, 460	
25110	Sept. 17, 1920	35, 720		11, 395	
25111	Sept. 20, 1920				748
25112	do	15, 487		40, 725	
25113	Sept. 28, 1920			73, 840	
25114	Sept. 30, 1920			42, 878	
25115	Oct. 13, 1920	35, 102		45, 000	
25116	do		112, 330		

SHIPPED BY BETHLEHEM STEEL CO.—Continued

Exhibit No.	Invoice date	Form of product			
		Bethlehem specials	Plates	Standard shapes	Bars
25117	Oct. 13, 1920	13,000		31,260	
25118	do			90,000	
25119	Oct. 16, 1920		152,680		
25120	Oct. 20, 1920		112,040		
25121	Oct. 22, 1920		111,220		
25122	Oct. 25, 1920		83,110		
25123	Oct. 26, 1920		73,730		
25124	Oct. 27, 1920	19,110		58,460	
25125	Oct. 29, 1920		107,680		
25126	Nov. 13, 1920		19,420		
25127	do		58,270		
25128	Dec. 6, 1920				458

EXHIBIT 29

CAMBRIA STEEL COMPANY

WIDENER BUILDING

PHILADELPHIA

CONTRACT NO. CH-200

CAMBRIA STEEL COMPANY agrees to sell and Russell Wheel & Foundry Co., Detroit, Mich., agree to buy at prices and upon terms specified below: (7,000 to 8,000 tons) 7,000-8,000 Net tons of Seven thousand to eight thousand tons of Standard Structural Shapes, Plates and Bars.

Material and price

Division of tonnage	Description of material	Base price or pound	Extras
		<i>Cents</i>	
6,500 tons.....	Shapes.....	2.29	Sept. 1, 1919
500 tons.....	Bars.....	2.29	June 1, 1918
500 tons.....	Plates.....	2.29	Sept. 1, 1919

¹ Approximately.

Above material for Detroit Edison Co. Power Plant.

Quality: Manufacturer's Standard Class A or B Structural Shapes; Plates and Bars of Soft Open Hearth Steel.

Material to be within the limits and of the sizes published by Seller and subject to Seller's standard variations for rolling and shearing.

Place of Delivery: F. O. B. Cars Detroit, Mich.

The price or prices quoted herein are based upon carload freight rate from Pittsburgh, Pa. to the place of delivery in effect at the date of this agreement, viz.: 29 cents per 100 lbs. In the event of an increase in such freight rate, the amount of such increase shall be added to the price of all materials shipped against this contract during the period in which such increased rate is in effect, and in the event of a decrease in such freight rate, the amount of such decrease shall be deducted from the price of all materials shipped hereunder during the period in which such decreased rate is in effect.

Terms of Payment: Net cash in 30 days or $\frac{1}{4}\%$ discount for cash in 10 days from date of invoice.

In case Buyer shall fail to make payments in accordance with the terms and provisions of this agreement, Seller may defer further shipments until such payments are made, or may, at its option, terminate this agreement.

Credits: Shipments and deliveries under this agreement shall at all times be subject to approval of Seller's Credit Department; and in case Seller shall have any doubt as to Buyer's responsibility Seller may decline to make any or further shipments hereunder except upon receipt of satisfactory security or for cash before shipment.

Specifications: Specifications shall be furnished to Seller by Buyer in substantially equal monthly quantities, beginning-----and ending----- Buyer's failure to furnish specifications as aforesaid may, at Seller's option and without notice to Buyer, be treated and considered as a refusal to accept and receive the unspecified portion of the goods. 4,500 tons before April 1st, 1923; 3,000 to 3,500 tons before June 15th, 1923.

Time of Shipment: Shipments shall be made as soon after receipt of specifications as condition of Seller's mills will permit.

In the event of unavoidable delay due to fires, strikes or other causes beyond the control of Seller, Buyer may, subject to previously obtaining consent of Seller, cancel the portion of the goods not manufactured or in process of manufacture at the time his request to cancel reaches the works.

Seller shall not be responsible for delays in deliveries caused by strikes, differences with workmen, shortage of cars, delays in transportation, accidents at mills, or other contingencies beyond its control.

Seller is hereby given the right to have any Company in which the Midvale Steel and Ordnance Company is interested as stockholder or otherwise furnish material of the same kind and quality at the same cost to Buyer in whole or part performance of this contract; and it is agreed that shipments and billing of material by or in the name of such Company, as well as any payments made to such Company therefor, shall be as effective and binding as if made by or to Cambria Steel Company direct.

Executed at Philadelphia, Pa., in duplicate, this 30th day of January, 1923.

CAMBRIA STEEL COMPANY,
By (Signed) J. C. HOLDING,
Manager Structural Division.

RUSSELL WHEEL & FOUNDRY CO.,
(Signed) C. W. RUSSELL, V. P. & G. M.

Source: F. T. C. Docket 962, Ex. 22945.

EXHIBIT 30

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

- *Cambria v. Bethlehem and Lackawanna*

The following is a partial Abstract of invoices contained in Commission's Exhibit, herein, No. —, showing shipments of Plates, Standard Structural Shapes and Bars to Russell Wheel & Foundry Company, Detroit, Mich., from January 6 to October 26, 1923. On January 30, 1923, Cambria Steel Company contracted to furnish the above-named consumer approximately 6,500 net tons of structural shapes; 500 net tons of Bars; and 500 net tons of Plates (contract No. CH 290, Commission's Exhibit, herein, No. 22945).

The first and only shipment against this contract appears to have been made by Cambria Steel Company on March 28 (Commission's Exhibit, herein, No. —, pp. Nos. 8 and 9).

With those exceptions the shipments made subsequent thereto, as listed below, were invoiced by Bethlehem Steel Company, all or a considerable part of the amounts being designated upon invoices as applying upon the contract placed with Cambria Steel Company. (See EXCEPTIONS.) Some of these shipment included substantial quantities of identically the same form and size of materials by two or more mills.

FROM: JOHNSTOWN, PA.

Page No.	Invoice date	Plates	Shapes	Bars	Page No.	Invoice date	Plates	Shapes	Bars
	1923					1923			
1	Jan. 6	59, 180			108	July 2	82, 520		
2	Jan. 8		120, 233		110	July 3	149, 870		
4	Jan. 9		147, 193		111	July 5	50, 240		
6	Jan. 18		147, 526		112	July 6	61, 210		
8	Mar. 28		51, 875		113	July 9	62, 450		
9	do		46, 812		114	do		156, 800	
24	Apr. 3		86, 906		115	July 13	78, 420		
25	Apr. 4		85, 754		116	do	120, 620		
26	Apr. 6		114, 387		117	do	122, 650		
28	Apr. 9		89, 708		118	July 16	240, 900		
29	Apr. 10		67, 271		120	July 20	68, 750		
30	Apr. 17		43, 548		121	July 21		39, 494	
31	do		81, 332		122	do	65, 120		
33	Apr. 20		146, 712		123	July 23		100, 600	
35	Apr. 23		51, 114		124	July 25		91, 686	
36	do		60, 023		125	do		79, 873	
37	Apr. 24		53, 016		126	July 26		85, 745	
38	do		82, 685		128	July 27		2, 897	
39	do		85, 582		129	do	81, 770		
41	Apr. 26		106, 724		130	July 30	130, 970		
42	Apr. 27		108, 779		132	July 31			13, 310
43	Apr. 28		235, 614		133	do	46, 870		
44	Apr. 30		259, 009		134	Aug. 1		68, 550	
45	do		89, 598		135	Aug. 2		132, 811	
46	do		201, 976		137	Aug. 3		88, 872	
50	May 2		142, 692		138	do		72, 450	
51	May 4		41, 292		151	Aug. 9		131, 865	
52	do		34, 917		154	do		101, 471	
53	do		122, 940		165	Aug. 10	123, 400		
54	do		184, 399		167	do		30, 068	
55	May 8		114, 337		173	Aug. 13	92, 860		
57	May 10		54, 700		177	do		92, 090	
58	May 12		130, 530		180	Aug. 17		83, 437	
59	May 17		179, 433		182	do		77, 149	
63	May 18		134, 560		185	Aug. 20		87, 393	
65	May 21		15, 942		187	do		161, 306	
66	do	59, 440			190	Aug. 21	65, 910		
67	do		100, 346		192	do		166, 616	
69	May 25		76, 095		194	Aug. 22		138, 903	
70	do		97, 272		204	Aug. 25		114, 095	
71	May 26		130, 774		207	Aug. 27		104, 028	
72	May 28	114, 670			209	do		93, 245	
73	do		150, 963		210	Aug. 28		140, 358	
74	do		9, 576		211	Aug. 29		111, 464	
75	do		140, 594		212	do		100, 292	
77	May 30	159, 880			219	Sept. 3		13, 243	
78	May 31	128, 260			220	do		12, 484	
80	June 4		103, 800		221	do	11, 220		
81	June 5		60, 600		222	do			42, 775
82	do		71, 218		225	Sept. 5		112, 482	
83	June 6	138, 440			226	do		98, 235	
84	June 7	47, 230			227	do		73, 461	
85	do		108, 407		228	do		175, 502	
86	do		137, 357		229	do	50, 810		
87	do	142, 760			231	do			14, 320
88	June 8	180, 329			232	Sept. 7		115, 311	
89	June 9	221, 460			238	Sept. 11		78, 485	
90	June 11	164, 630			239	do		55, 077	
91	do		121, 893		240	do		135, 626	
92	June 14	80, 280			242	do		53, 148	
93	do	105, 320			243	do		75, 426	
95	June 16	107, 180			244	Sept. 12		38, 243	
96	do		30, 975		247	Sept. 17		72, 968	
97	June 19	107, 830			250	Sept. 18		92, 664	
98	June 20	79, 200			251	Sept. 21		77, 846	
99	June 23		132, 774		255	Sept. 26		80, 465	
101	do		46, 794		257	Sept. 28		68, 586	
102	June 26	103, 830			258	Sept. 29		54, 550	
103	June 27	148, 630			259	Oct. 3		6, 768	
104	June 29	66, 320			260	do		6, 445	
105	June 30	122, 450			261	do		107, 924	
106	do		36, 687		263	Oct. 26	50, 920		
107	July 2	72, 580							

FROM BETHLEHEM, PA.

Page No.	Invoice date	Plates	Shapes	Bars	Page No.	Invoice date	Plates	Shapes	Bars
1923					1923				
10	Jan. 11		96,400	-----	179	June 2		20,240	-----
11	do.		19,135	-----	127	July 26		12,636	-----
12	Jan. 16		33,859	-----	161	Aug. 11		9,026	-----
14	Jan. 26		70,700	-----	184	Aug. 20		24,744	-----
15	Feb. 2		10,439	-----	189	Aug. 21		53,890	-----
16	Feb. 8		18,339	-----	230	Sept. 6		62,512	-----
17	Feb. 26		24,809	-----	1236	Sept. 8		34,507	-----
18	do.		86,740	-----	1237	Sept. 11		52,469	-----
19	Mar. 5		36,266	-----	1249	Sept. 17		37,419	-----
20	Mar. 7		57,600	-----	254	Sept. 25		94,828	-----
23	Apr. 2		615	-----	256	Sept. 27		25,471	-----
64	May 19		62,378	-----	262	Oct. 25		12,630	-----

FROM LACKAWANNA, N. Y.

13	Jan. 23		62,830	-----	175	Aug. 13	113,420		
21	Mar. 27	79,015		-----	178	Aug. 17			4,895
47	Apr. 30	82,460		-----	179	do.		59,452	
48	do.		69,212	-----	183	Aug. 18	120,100		
61	May 17		62,445	-----	196	Aug. 22	106,145		
68	May 24		63,350	-----	198	do.	109,155		
76	May 29		57,058	-----	200	Aug. 23	106,920		
139	Aug. 4	118,115		-----	202	Aug. 24	111,410		
143	Aug. 6	106,640		-----	206	Aug. 25	74,155		
145	Aug. 7	108,235		-----	208	Aug. 27	119,875		
147	Aug. 8	144,180		-----	213	Aug. 29	149,565		
149	do.	113,695		-----	215	do.	21,175		
156	Aug. 9	148,295		-----	216	Aug. 31	119,270		
159	do.	112,310		-----	218	do.			78,750
162	Aug. 10	89,425		-----	234	Sept. 7	66,095		
168	do.	100,575		-----	245	Sept. 12	86,520		
170	Aug. 11	105,985		-----	252	Sept. 22	66,600		

¹ Does not apply upon contract with Cambria Steel Co.

EXHIBIT 31

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET NO. 962

The following is an ABSTRACT of "Shipping Notices" of Bethlehem Steel Co., Lackawanna Steel Co., and Cambria Steel Co., covering steel bars shipped for account of Ford Motor Co., Detroit, Mich., to D. Wilcox Manufacturing Co., Mechanicsburg, Pa., which shows—

(1) Shipment of substantial quantities from Johnstown and Lackawanna, both prior and subsequent to the merger of the properties of Bethlehem, Lackawanna, and Cambria;

(2) The character and dimensions of materials;

(3) The chemical analysis of product as disclosed by "Shipping Notices";

(4) The "Ford U. S. Symbol" covering the various sizes; and

(5) The tonnage of the different sizes supplied by each mill.

NOTE.—This statement does not purport to be a complete statement of such shipments. It is intended to illustrate merely the fact that both mills produced substantially the same materials at the same time.

Legend:

(A) "Ford U. S. Symbol," T-321.

(B) "Ford U. S. Symbol," T-4323--

(C) "Ford U. S. Symbol," T-228.

(D) "Ford U. S. Symbol," T-222.

(E) "Ford U. S. Symbol," T-248.

(F) "Ford U. S. Symbol," T-241.

(G) "Ford U. S. Symbol," T-45-46.

CONCENTRATION OF ECONOMIC POWER

FROM JOHNSTOWN, PA.

Exhibit		Date of ship- ment	Weight	Description	Analysis				
No.	Page				Car- bon	Silicon	Phos- phate	Sulfate	Manga- nese
7	Apr. 30, 1922	38,300	(A) Rounds: $\frac{5}{8}$ inch.	0.310	0.13	0.014	0.026	0.74	
27	Feb. 12, 1923	47,800	do.	.290	.11	.018	.030	.85	
13	Apr. 4, 1923	44,940	do.	.320	.12	.016	.027	.82	
93	Nov. 22, 1924	7,240	do.	.280	.09	.017	.036	.73	
93	do.	6,900	do.	.280	.11	.015	.028	.82	
95	Dec. 5, 1924	2,050	do.	.280	.11	.015	.028	.82	
100	Dec. 19, 1924	18,300	do.	.300	.11	.021	.032	.75	
8	July 22, 1922	92,100	(B) Rounds: $1\frac{1}{8}$ inches.	.330	.10	.015	.040	.80	
20	Nov. 6, 1922	47,620	do.	.330	.13	.014	.035	.72	
23	Jan. 17, 1923	38,700	do.	.280	.12	.014	.030	.71	
9	Apr. 9, 1923	103,500	do.	.300	.11	.028	.049	.70	
64	Sept. 27, 1923	46,300	do.	.350	.13	.016	.027	.75	
				.370		.017	.038	.79	
89	Nov. 10, 1924	46,770	do.	.400	.10	.017	.028	1.76	
1	May 31, 1922	50,660	(C) Rounds: $1\frac{1}{8}$ inches.	.280	.10	.014	.026	.56	
2	do.	29,700	(E) Rounds: $1\frac{1}{8}$ inches.	.280	.11	.014	.026	.74	
18	Nov. 3, 1922	115,080	(C) Rounds: $1\frac{1}{8}$ inches.	.340	.10	.014	.039	.56	
19	Nov. 6, 1922	11,000	do.	.340	.10	.014	.039	.56	
22	Jan. 7, 1923	64,220	do.	.340	.13	.015	.045	.50	
28	Mar. 5, 1923	59,940	do.	.031	.08	.015	.025	.50	
				.035	.13	.020	.045	.52	
24	Aug. 31, 1923	91,650	do.	.310	.08	.015	.038	.55	
25	do.	31,200	do.	.310	.08	.015	.038	.55	
91	Nov. 10, 1924	32,360	do.	.300	.13	.018	.031	.58	
94	Nov. 22, 1924	15,890	do.	.300	.13	.018	.031	.58	
3	May 31, 1922	84,000	(D) Rounds: $1\frac{1}{4}$ inches.	.280	.09	.014	.020	.74	
9	July 26, 1922	91,550	(E) Rounds: $1\frac{1}{4}$ inches.	.330	.13	.017	.030	.80	
10	do.	91,540	(D) Rounds: $1\frac{1}{4}$ inches.	.330	.11	.014	.019	.70	
17	Aug. 29, 1922	74,720	(E) Rounds: $1\frac{1}{4}$ inches.	.290	.10	.015	.022	.70	
				.320	.11	.017	.023	.70	
21	Jan. 17, 1923	24,200	do.	.280	.12	.014	.030	.71	
25	Jan. 25, 1923	45,580	(D) Rounds: $1\frac{1}{4}$ inches.	.300	.10	.015	.032	.71	
26	do.	7,000	(E) Rounds: $1\frac{1}{4}$ inches.	.280	.12	.014	.030	.71	
8	Apr. 9, 1923	15,420	(D) Rounds: $1\frac{1}{4}$ inches.	.330	.12	.015	.045	.85	
26	Aug. 31, 1923	19,800	do.	.280	.08	.017	.043	.75	
55	July 25, 1924	19,800	do.	.340	.11	.017	.030	.76	
55	do.	40,100	do.	.320	.13	.018	.025	.82	
55	do.	36,100	do.	.340	.09	.017	.027	.75	
56	July 28, 1924	55,200	do.	.340	.09	.017	.027	.75	
57	do.	30,000	(E) Rounds: $1\frac{1}{4}$ inches.	.340	.11	.017	.030	.76	
65	Sept. 27, 1924	111,090	(D) Rounds: $1\frac{1}{4}$ inches.	.390	.10	.018	.032	.81	
72	Oct. 3, 1924	51,300	(E) Rounds: $1\frac{1}{4}$ inches.	.340	.11	.017	.029	.75	
84	Nov. 4, 1924	5,200	do.	.390	.12	.016	.039	.80	
86	Nov. 6, 1924	33,190	(D) Rounds: $1\frac{1}{4}$ inches.	.380	.12	.018	.032	.77	
86	do.	69,030	do.	.360	.11	.018	.037	.77	
87	Nov. 8, 1924	36,840	(E) Rounds: $1\frac{1}{4}$ inches.	.350	.12	.017	.037	.70	
96	Dec. 5, 1924	96,610	(D) Rounds: $1\frac{1}{4}$ inches.	.330	.12	.018	.042	.80	
98	Dec. 9, 1924	11,460	(E) Rounds: $1\frac{1}{4}$ inches.	.340	.11	.017	.040	.74	
98	do.	19,400	do.	.340	.12	.020	.045	.75	
6	June 17, 1922	36,160	(F) Rounds: $1\frac{5}{8}$ inches	.290	.08	.014	.022	.74	
				.280	.11	.016	.026	.78	
11	July 28, 1922	81,040	do.	.330	.11	.014	.038	.78	
24	Jan. 25, 1923	25,400	do.	.330	.12	.015	.034	.83	
4	June 2, 1922	100,250	do.	.300	.10	.015	.032	.71	
5	June 17, 1922	31,500	(G) Rounds: $1\frac{9}{16}$ inches.	.320	.10	.015	.027	.76	
				.330	.10	.018	.031	.75	
12	Aug. 1, 1922	114,360	do.	.330	.10	.015	.031	.75	
				.320	.11	.014	.023	.70	
16	Aug. 19, 1922	55,560	do.	.340	.13	.017	.038	.85	
				.300	.14	.014	.032	.73	
63	Sept. 27, 1924	62,420	do.	.340	.12	.015	.032	.70	
				.350	.12	.018	.032	.74	
66	Sept. 29, 1924	42,340	do.	.360	.12	.021	.032	.81	
66	do.	3,840	do.	.350	.12	.018	.032	.74	
83	Nov. 4, 1924	8,990	do.	.360	.13	.017	.038	.77	
83	do.	1,720	do.	.380	.12	.018	.034	.71	
85	do.	49,250	do.	.360	.13	.017	.038	.72	
88	Nov. 8, 1924	23,310	do.	.310	.08	.018	.039	.72	
90	Nov. 10, 1924	32,060	do.	.330	.12	.018	.042	.80	
92	Nov. 22, 1924	7,150	do.	.330	.12	.018	.042	.80	
				.350					
97	Dec. 9, 1924	48,600	do.	.400					
				.280	.11	.017	.031	.70	
101	Dec. 19, 1924	65,120	do.	to					
				.340	.13	.018	.036	.79	
			Rounds: $1\frac{13}{16}$ inches.	(2)	(2)	(2)	(2)	(2)	

¹ Indicates analysis of largest tonnage in cases where more than one analysis and tonnage are shown.² None.

CONCENTRATION OF ECONOMIC POWER

345

FROM LACKAWANNA, N. Y.

Exhibit		Date of shipment	Weight	Description	Analysis				
No.	Page				Carbon	Silicon	Phosphate	Sulfate	Manganese
31		Sept. 13, 1923	19,775	(A) Rounds: $\frac{5}{8}$ inch	.305		.010	.040	.88
32		do	18,250	do	.305		.010	.040	.88
36		Nov. 14, 1923	16,560	do	.345		.010	.030	.71
39		Dec. 14, 1923	16,260	do	.335		.018	.039	.78
42		Jan. 15, 1924	15,895	do	.300		.030	.038	.81
51		Apr. 14, 1924	10,285	do	.330		.011	.039	.88
68		Sept. 30, 1924	10,865	do	.330		.018	.039	.75
69		do	20,755	do	.340		.020	.034	.85
80		Oct. 24, 1924	20,400	do	.335		.023	.032	.75
5		Mar. 2, 1923	94,770	Rounds: $1\frac{1}{8}$ inches	.320		.028	.049	.75
5		Mar. 23, 1923	92,900	(B) Rounds: $1\frac{1}{8}$ inches	.270		.033	.044	.73
14		May 25, 1923	90,120	Rounds: $1\frac{1}{8}$ inches	.350	.140	.015	.036	.77
22		July 13, 1923	1,780	do	.295	.117	.033	.035	.77
27		Sept. 11, 1923	19,125	(B) Rounds: $1\frac{1}{8}$ inches	.285		.018	.046	.71
30		do	61,050	do	.280		.018	.043	.77
34		Oct. 6, 1923	2,075	Rounds: $1\frac{1}{8}$ inches	.280		.018	.046	.71
75		Oct. 7, 1924	137,165	(B) Rounds: $1\frac{1}{8}$ inches	.285		.022	.039	.65
76		Oct. 23, 1924	64,770	do	.350		.020	.028	.87
15		July 7, 1923	78,345	(C) Rounds: $1\frac{1}{8}$ inches	.315		.015	.038	.90
16		do	19,140	(E) Rounds: $1\frac{1}{8}$ inches	.315		.015	.038	.90
17		July 10, 1923	37,490	(C) Rounds: $1\frac{1}{8}$ inches	.310		.015	.038	.90
18		do	38,155	(E) Rounds: $1\frac{1}{8}$ inches	.310		.015	.038	.90
20		July 13, 1923	64,125	(C) Rounds: $1\frac{1}{8}$ inches	.270		.009	.038	.72
28		Sept. 11, 1923	5,690	do	.290		.012	.037	.58
35		Nov. 14, 1923	56,105	do	.270		.013	.045	.57
38		Dec. 14, 1923	35,725	do	.280		.010	.039	.48
43		Jan. 15, 1924	36,540	do	.255	.101	.013	.035	.54
44		Jan. 16, 1924	19,900	do	.340		.015	.035	.61
44		do	49,145	do	.280		.016	.034	.61
48		Mar. 11, 1924	36,780	do	.340		.016	.045	.54
49		Apr. 2, 1924	49,095	do	.345		.027	.050	.62
53		May 16, 1924	130,095	do	.345		.027	.050	.62
61		Sept. 22, 1924	33,710	do	.260		.020	.049	.44
62		do	19,420	do	.260		.015	.049	.58
71		Sept. 30, 1924	5,900	do	.260		.015	.049	.58
74		Oct. 4, 1924	1,840	do	.275		.010	.025	.61
77		Oct. 23, 1924	50,565	do	.325		.014	.037	.60
99		Dec. 18, 1924	139,280	do	.370		.035	.035	.56
13		Aug. 10, 1922	86,100	(D) Rounds: $1\frac{1}{4}$ inches	.320	.129	.020	.038	.79
1		Mar. 29, 1923	85,885	do	.350	.156	.024	.049	.84
3		do	16,600	do	.300		.012	.039	.74
2		do	47,300	(E) Rounds: $1\frac{1}{4}$ inches	.290		.017	.041	.77
3		do		do	.200		.017	.041	.77
19		July 10, 1923	101,900	(D) Rounds: $1\frac{1}{4}$ inches	.300		.012	.039	.74
33		Oct. 6, 1923	44,320	(E) Rounds: $1\frac{1}{4}$ inches	.310	.134	.013	.043	.82
37		Nov. 15, 1923	39,575	do	.335	.125	.010	.047	.77
41		Dec. 15, 1923	46,660	do	.310	.140	.010	.050	.80
45		Jan. 16, 1924	8,750	do	.320		.020	.034	.80
45		do	7,865	do	.275		.008	.035	.71
45		do	32,960	do	.335		.011	.035	.87
47		Mar. 11, 1924	27,996	do	.290		.016	.050	.84
50		Apr. 14, 1924	28,350	do	.320		.020	.034	.80
54		June 4, 1924	55,330	do	.310		.013	.043	.82
58		Aug. 20, 1924	23,770	do	.335		.010	.047	.77
59		do	21,220	do	.310		.010	.050	.80
60		Aug. 29, 1924	6,980	(D) Rounds: $1\frac{1}{4}$ inches	.320		.020	.034	.80
60		do	65,935	do	.275		.008	.035	.71
73		Oct. 4, 1924	65,270	do	.335		.011	.035	.88
78		Oct. 23, 1924	22,540	(E) Rounds: $1\frac{1}{4}$ inches	.380		.011	.035	.88
78		do	30,095	do	.320		.027	.039	.77
82		Oct. 31, 1924	20,870	(D) Rounds: $1\frac{1}{4}$ inches	.310		.012	.045	.79
82		do	6,330	do	.315		.016	.035	.73
82		do	16,455	do	.375		.021	.027	.76
82		do	16,265	do	.395		.018	.041	.77
82		do	14,695	do	.390		.014	.023	.83
82		do	18,545	do	.360		.018	.023	.81
82		do	10,000	do	.400		.020	.038	.81
14		Aug. 11, 1922	76,410	(F) Rounds: $1\frac{1}{8}$ inches	.405		.013	.029	.90
10		Apr. 21, 1923	25,505	do	.300	.109	.017	.037	.86
12		do	39,830	do	.320	.129	.019	.048	.79
				do	.270	.12	.019	.044	.70
				do	.270		.019	.044	.70

FROM LACKAWANNA, N. Y.—Continued

Exhibit		Date of shipment	Weight	Description	Analysis				
No.	Page				Carbon	Silicon	Phosphate	Sulfate	Manganese
-----	21	July 13, 1923	65,725	(F) Rounds: 1½ inches.	.295	-----	.014	.033	.87
-----	23	do.	62,165	do.	.310	-----	.013	.043	.82
-----	29	Sept. 11, 1923	25,515	do.	.295	-----	.014	.033	.87
-----	40	Dec. 15, 1923	2,345	do.	.340	-----	.034	.049	.70
-----	40	do.	50,210	do.	.325	-----	.016	.041	.87
-----	46	Jan. 17, 1924	54,010	do.	.290	-----	.016	.050	.84
-----	52	May 13, 1924	67,430	do.	.295	-----	.017	.038	.84
-----	15	Aug. 15, 1922	102,820	(G) Rounds: 1½ inches.	.320	-----	.014	.040	.82
-----	6	Apr. 2, 1923	91,430	do.	.305	.12	.023	.036	.89
-----	11	Apr. 21, 1923	79,830	do.	.295	.094	.017	.033	.70
-----	67	Sept. 30, 1924	3,680	do.	to	to	to	to	to
-----	67	do.	73,075	do.	.320	.109	.027	.053	.90
-----	70	do.	84,900	do.	.370	-----	.014	.032	.84
-----	79	Oct. 24, 1924	60,735	do.	.325	.094	.035	.039	.77
-----	81	do.	63,560	do.	.310	.094	.018	.043	.68
-----	7	Apr. 6, 1923	141,915	Rounds: 1½ inches.	.370	-----	.016	.029	.77
-----					.400	-----	.019	.034	.74
-----					.350	-----	.010	.039	.82
-----					.270	-----	.019	.040	.70
-----					to	-----	to	to	to
-----					.285	-----	.025	.044	.70

EXHIBIT 32

IN THE MATTER OF BETHLEHEM STEEL CORPORATION, ET AL. DOCKET No. 962

The following is a partial abstract of invoices rendered by Cambria Steel Co. and Bethlehem Steel Co. against Bellefontaine Bridge & Steel Co., Bellefontaine, Ohio, during a portion of the years 1919, 1922, and 1923, showing shipments of substantial quantities of structural shapes, including bar sizes, from competitive plants, both prior and subsequent to the acquisition of such plants by the Bethlehem Steel Co. As a fraction only of the total number of invoices were examined and tabulated and tonnages of less than 10,000 pounds were omitted, this does not purport to be anything like a complete statement of such shipments.

Exhibit No.	Invoice date	Material	From—		
			Bethlehem	Johnstown	Lackawanna
		ANGLES			
24040	Oct. 20, 1919	2½ by 2 by ¼ inch	28,685		
24026	June 21, 1922	2½ by 2 by ¼ inch		116,068	
24051	Dec. 20, 1922	2½ by 2 by ¼ inch	89,210		
24075	July 7, 1923	2½ by 2 by ¼ inch		43,440	
24085	Apr. 24, 1923	2½ by 2 by ¼ inch	53,605		
24050	Dec. 18, 1922	3 by 2 by ¼ inch	33,157		
24072	June 11, 1923	3 by 2 by ¼ inch			46,580
24078	July 23, 1923	3 by 2 by ¼ inch		17,117	
24064	Apr. 17, 1923	3 by 2 by ⅝ inch		14,960	
24072-3	June 11, 1923	3 by 2 by ⅝ inch			14,555
24078	July 23, 1923	3 by 2 by ⅝ inch		15,000	
24066	Apr. 25, 1923	3 by 2½ by ¼ inch		27,000	
24072-3	June 11, 1923	3 by 2½ by ¼ inch			13,244
24074	July 7, 1923	3 by 2½ by ¼ inch		26,388	
24075	do.	3 by 2½ by ¼ inch		24,502	
24047	Nov. 22, 1919	3 by 2½ by ¼ inch	27,000		
24066	Apr. 25, 1923	3 by 2½ by ⅝ inch		16,800	
24072-3	June 11, 1923	3 by 2½ by ⅝ inch			16,345
24066	Apr. 25, 1923	3½ by 2½ by ¼ inch		26,930	
24060-1	Feb. 2, 1923	3½ by 2½ by ¼ inch			33,977

Exhibit No.	Invoice date	Material	From—		
			Beth-lehem	Johns-town	Lacka-wanna
ANGLES—continued					
24053-4	Dec. 31, 1922	3½ b. 2½ by ¼ inch			21,839
24067-8	May 4, 1923	3½ by 2½ by ¼ inch			27,264
24082	Aug. 27, 1923	3½ by 2½ by ¼ inch		29,277	
24039	Sept. 18, 1919	3½ by 2½ by ⅝ inch	25,596		
24060-1	Feb. 2, 1923	3½ by 2½ by ⅝ inch			14,183
24067-8	May 4, 1923	3½ by 2½ by ⅝ inch			18,026
24082	Aug. 27, 1923	3½ by 2½ by ⅝ inch		18,300	
24033	Aug. 7, 1922	3½ by 2½ by ⅝ inch		38,592	
24067-8	May 4, 1923	4 by 3 by ¼ inch			16,356
24069	May 10, 1923	4 by 3 by ¼ inch		17,394	
24078	July 23, 1923	4 by 3 by ¼ inch		14,500	
24057-8	Jan. 15, 1923	4 by 3 by ¼ inch			17,087
24013	May 25, 1922	4 by 3 by ⅝ inch		74,634	
24069	May 10, 1923	4 by 3 by ⅝ inch		10,800	
24078	July 23, 1923	4 by 3 by ⅝ inch		21,600	
24067-8	May 4, 1923	4 by 3 by ⅝ inch			10,678
24057-8	Jan. 15, 1923	4 by 3 by ⅝ inch			23,308
24053-4	Dec. 31, 1922	6 by 4 by ⅝ inch			34,534
24016	May 30, 1922	6 by 4 by ⅝ inch		29,331	
24034-5	June 14, 1922	6 by 4 by ⅝ inch		23,370	
CHANNELS					
24014	May 26, 1922	6 inches by 8.2 feet		59,470	
24020	May 31, 1922	6 inches by 8.2 feet		48,960	
24055-6	Jan. 2, 1923	6 inches by 8.2 feet			12,890
24059	Jan. 25, 1923	7 inches by 9.8 feet			50,541
24031-2	July 5, 1922	8 inches by 11.5 feet		107,205	
24057-8	Jan. 15, 1923	8 inches by 11.5 feet			20,482
24071	May 21, 1923	8 inches by 11.5 feet		72,769	
24015	May 27, 1922	9 inches by 13.4 feet		74,852	
24053-4	Dec. 31, 1922	9 inches by 13.4 feet			14,807
24070	May 21, 1923	9 inches by 13.4 feet		64,789	
24021	June 2, 1922	10 inches by 15.3 feet		61,884	
24022-3	do.	10 inches by 15.3 feet		22,491	
24060-1	Feb. 23, 1923	10 inches by 15.3 feet			18,421
24081	Aug. 27, 1923	10 inches by 15.3 feet		48,400	
24060-1	Feb. 2, 1923	12 inches by 20.7 feet			13,352
24063	Apr. 4, 1923	12 inches by 20.7 feet		19,803	
24077	July 23, 1923	12 inches by 20.7 feet		32,351	
BEAMS					
24029	June 27, 1922	8 inches by 18.4 feet		33,840	
24055-6	Jan. 2, 1923	8 inches by 18.4 feet			11,610
24053-4	Dec. 31, 1922	9 inches by 21.8 feet			13,385
24083	Oct. 9, 1923	9 inches by 21.8 feet	13,080		
24024	June 14, 1922	12 inches by 31.8 feet		45,361	
24084	Dec. 3, 1923	12 inches by 31.8 feet	20,449		
24028	June 22, 1922	15 inches by 42.9 feet		34,860	
24018	May 31, 1922	15 inches by 42.9 feet		48,788	
24062	Feb. 10, 1923	15 inches by 42.9 feet	14,125		
24085	Dec. 5, 1923	15 inches by 42.9 feet	29,725		

EXHIBIT 33

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL.—DOCKET No. 962

The following is a partial Abstract of invoices of Bethlehem Steel Co. rendered against Russell Wheel & Foundry Co., Detroit, Mich., which invoices, with the exceptions noted, are shown to cover shipments against contract placed with Cambria Steel Co. on January 30, 1923 (commission's exhibit, herein, No. 22945) No. CH200.

These invoices show that portions of the order which were diverted by Bethlehem Steel Co. to the Lackawanna plant consisted of substantial quantities of identically the same size of plates as were being produced and shipped by the Johnstown plant at about the same time.

Invoice date	Product, width and thickness	From Lackawanna, N. Y.			From Johnstown, Pa.		
		Page No.	Destination	Weight	Page No.	Destination	Weight
May 21, 1923...	16 inches by $\frac{1}{2}$ inch...	-----	Detroit, Mich.	-----	66	Detroit, Mich.	59, 440
May 23, 1923...	14 to 36 inches by $\frac{3}{8}$ to $\frac{7}{8}$ inch.	-----	do.	-----	72	do.	114, 670
May 30, 1923...	18 to 20 inches by $\frac{3}{4}$ inch.	-----	do.	-----	77	do.	159, 880
May 31, 1923...	14 to 18 inches by $\frac{3}{8}$ to $\frac{7}{8}$ inch.	-----	do.	-----	78	do.	128, 260
June 6, 1923...	10 to 18 inches by $\frac{3}{8}$ to $\frac{7}{8}$ inch.	-----	do.	-----	83	do.	138, 440
June 7, 1923...	24 to 54 inches by $\frac{3}{8}$ to $\frac{1}{2}$ inch.	-----	do.	-----	84	do.	47, 230
June 8, 1923...	20 inches by $\frac{7}{8}$ inch.	-----	do.	-----	88	do.	180, 320
June 9, 1923...	18 to 20 inches by $\frac{1}{2}$ to $\frac{7}{8}$ inch.	-----	do.	-----	89	do.	221, 460
June 11, 1923...	10 to 20 inches by $\frac{1}{2}$ to $\frac{7}{8}$ inch.	-----	do.	-----	90	do.	164, 630
June 14, 1923...	40 to 56 inches by $\frac{5}{16}$ to $\frac{1}{2}$ inch.	-----	do.	-----	92	do.	80, 280
Do.....	12 to 36 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	93	do.	105, 320
June 16, 1923...	10 to 21 inches by $\frac{5}{16}$ to $\frac{7}{8}$ inch.	-----	do.	-----	95	do.	107, 180
June 19, 1923...	8 to 36 inches by $\frac{1}{2}$ to $\frac{7}{8}$ inch.	-----	do.	-----	97	do.	107, 630
June 20, 1923...	24 to 54 inches by $\frac{3}{8}$ to $\frac{1}{2}$ inch.	-----	do.	-----	98	do.	79, 200
June 26, 1923...	42 to 60 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	102	do.	103, 830
June 27, 1923...	48 to 78 inches by $\frac{5}{16}$ to $\frac{1}{2}$ inch.	-----	do.	-----	103	do.	148, 630
June 29, 1923...	48 to 78 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	104	do.	66, 320
June 30, 1923...	42 to 60 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	105	do.	122, 450
July 2, 1923...	42 to 60 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	107	do.	72, 580
Do.....	11 to 22 inches by $\frac{3}{8}$ to $\frac{3}{4}$ inch.	-----	do.	-----	108	do.	82, 520
July 3, 1923...	40 to 72 inches by $\frac{3}{8}$ to $\frac{3}{4}$ inch.	-----	do.	-----	110	do.	149, 870
July 5, 1923...	40 to 60 inches by $\frac{1}{2}$ inch.	-----	do.	-----	111	do.	50, 240
July 6, 1923...	18 to 36 inches by $\frac{3}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	112	do.	61, 210
July 9, 1923...	42 to 60 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	113	do.	62, 450
July 13, 1923...	40 to 78 inches by $\frac{3}{8}$ to $\frac{3}{4}$ inch.	-----	do.	-----	115	do.	78, 420
Do.....	48 to 60 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	116	do.	120, 620
Do.....	18 to 36 inches by $\frac{5}{16}$ to $\frac{5}{8}$ inch.	-----	do.	-----	117	do.	122, 650
July 16, 1923...	12 to 30 inches by $\frac{1}{2}$ to $\frac{3}{4}$ inch.	-----	do.	-----	118	do.	240, 900
July 20, 1923...	42 to 60 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	120	do.	68, 750
July 21, 1923...	16 to 32 inches by $\frac{3}{8}$ to $\frac{5}{8}$ inch.	-----	do.	-----	122	do.	65, 120
July 27, 1923...	12 to 36 inches by $\frac{1}{2}$ to $\frac{3}{4}$ inch.	-----	do.	-----	129	do.	81, 770
July 30, 1923...	7 to 16 inches by $\frac{3}{8}$ to $\frac{3}{4}$ inch.	-----	do.	-----	130	do.	130, 970
July 31, 1923...	7 to 16 inches by $\frac{3}{8}$ to $\frac{5}{8}$ inch.	-----	do.	-----	133	do.	46, 870
Aug. 4, 1923...	10 to 36 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	139	do.	118, 115	-----	do.	-----
Aug. 6, 1923...	10 to 24 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	143	do.	106, 640	-----	do.	-----
Aug. 7, 1923...	18 to 36 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	145	do.	108, 235	-----	do.	-----
Aug. 8, 1923...	16 to 36 inches by $\frac{3}{4}$ to $\frac{3}{4}$ inch.	147	do.	144, 180	-----	do.	-----
Do.....	12 to 36 inches by $\frac{3}{8}$ to $\frac{3}{4}$ inch.	149	do.	113, 695	-----	do.	-----

¹ Exception, applies in part only upon contract CH200.¹

Invoice date	Product, width and thickness	From Lackawanna, N. Y.			From Johnstown, Pa.		
		Page No.	Destination	Weight	Page No.	Destination	Weight
Aug. 9, 1923	12 to 36 inches by $\frac{3}{8}$ to $\frac{3}{4}$ inch.	156	Detroit, Mich.	¹ 148, 295	-----	Detroit, Mich.	-----
Do.	12 to 16 inches by $\frac{3}{8}$ to $\frac{3}{4}$ inch.	159	do.	¹ 112, 310	-----	do.	-----
Aug. 10, 1923	7 to 36 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	162	do.	¹ 89, 425	-----	do.	-----
Do.	8 to 24 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	-----	do.	-----	165	do.	123, 400
Do.	10 to 36 inches by $\frac{1}{4}$ to $\frac{5}{8}$ inch.	168	do.	¹ 100, 575	-----	do.	-----
Aug. 11, 1923	8 to 36 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	170	do.	¹ 105, 985	-----	do.	-----
Aug. 13, 1923	10 to 18 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	-----	do.	-----	173	do.	92, 860
Do.	10 to 36 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	175	do.	¹ 113, 420	-----	do.	-----
Aug. 18, 1923	36 to 72 inches by $\frac{5}{16}$ to $\frac{1}{2}$ inch.	183	do.	¹ 120, 100	-----	do.	-----
Aug. 21, 1923	8 to 36 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	-----	do.	-----	190	do.	65, 810
Aug. 22, 1923	42 to 78 inches by $\frac{5}{16}$ to $\frac{1}{2}$ inch.	196	do.	¹ 106, 145	-----	do.	-----
Do.	12 to 78 inches by $\frac{1}{4}$ to $\frac{3}{8}$ inch.	198	do.	¹ 109, 155	-----	do.	-----
Aug. 23, 1923	12 to 78 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	200	do.	106, 920	-----	do.	-----
Aug. 24, 1923	42 to 78 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	202	do.	¹ 111, 410	-----	do.	-----
Aug. 25, 1923	38 to 72 inches by $\frac{1}{4}$ to $\frac{3}{8}$ inch.	206	do.	¹ 74, 155	-----	do.	-----
Aug. 27, 1923	42 to 60 inches by $\frac{1}{2}$ to $\frac{3}{4}$ inch.	208	do.	¹ 119, 875	-----	do.	-----
Aug. 29, 1923	40 to 72 inches by $\frac{5}{16}$ to $\frac{3}{4}$ inch.	213	do.	149, 565	-----	do.	-----
Do.	38 to 78 inches by $\frac{5}{16}$ to $\frac{3}{8}$ inch.	215	do.	21, 175	-----	do.	-----
Aug. 31, 1923	8 to 78 inches by $\frac{1}{4}$ to $\frac{5}{8}$ inch.	216	do.	119, 270	-----	do.	-----
Sept. 3, 1923	12 to 16 inches by $\frac{3}{8}$ to $\frac{5}{8}$ inch.	216	do.	-----	221	do.	11, 220
Sept. 5, 1923	8 to 36 inches by $\frac{5}{8}$ to $\frac{3}{4}$ inch.	-----	do.	-----	229	do.	50, 810
Sept. 7, 1923	12 to 72 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	234	do.	66, 095	-----	do.	-----
Sept. 12, 1923	7 to 48 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	245	do.	86, 520	-----	do.	-----
Sept. 23, 1923	8 to 78 inches by $\frac{1}{4}$ to $\frac{3}{4}$ inch.	252	do.	66, 660	-----	do.	-----
Oct. 26, 1923	12 to 18 inches by $\frac{3}{8}$ to $\frac{3}{4}$ inch.	-----	do.	-----	263	do.	50, 920

¹ Exception, applies in part only upon contract CH200.

FROM: JOHNSTOWN, PA.
FROM: SPARROWS POINT, MD.

EXHIBIT 34

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

The following is a partial abstract of invoices covering tank and structural quality steel plates rendered by Bethlehem Steel Co. to Belmont Iron Works, Philadelphia, Pa., showing substantial shipments from Johnstown, Pa., and Sparrows Point, Md., during the years 1925 and 1926.

CONCENTRATION OF ECONOMIC POWER

FROM: JOHNSTOWN, PA.

Page No.	Invoice date	Plates	Page No.	Invoice date	Plates
1	Jan. 9, 1925	15, 480	28	Jan. 9, 1926	38, 610
2	Feb. 14, 1925	26, 310	29	Jan. 26, 1926	47, 680
3	do	13, 720	30	Feb. 24, 1926	30, 850
4	Apr. 28, 1925	43, 670	31	do	42, 350
5	May 1, 1925	75, 300	32	do	3, 890
6	May 21, 1925	5, 070	33	do	12, 120
7	do	16, 550	34	do	25, 270
8	May 22, 1925	19, 780	35	Mar. 2, 1926	29, 960
9	June 10, 1925	5, 390	36	Mar. 4, 1926	29, 630
10	June 16, 1925	12, 500	37	Mar. 25, 1926	38, 230
11	June 26, 1925	28, 220	38	Apr. 14, 1926	16, 730
12	July 16, 1925	3, 190	39	Apr. 21, 1926	750
13	July 22, 1925	23, 130	40	May 3, 1926	32, 890
14	Aug. 6, 1925	60, 500	41	June 21, 1926	3, 210
15	Aug. 20, 1925	52, 655	42	Aug. 7, 1926	20, 620
16	do	13, 210	43	Aug. 27, 1926	64, 680
17	Aug. 26, 1925	36, 160	44	do	12, 180
18	Sept. 8, 1925	38, 160	45	Sept. 20, 1926	2, 720
19	Sept. 15, 1925	41, 050	46	Sept. 22, 1926	57, 070
20	Sept. 17, 1925	69, 410	47	do	13, 860
21	Oct. 15, 1925	7, 230	48	Sept. 30, 1926	35, 700
22	Oct. 20, 1925	6, 110	49	Oct. 18, 1926	40, 530
23	Dec. 5, 1925	66, 930	50	Oct. 30, 1926	43, 660
24	Dec. 8, 1925	49, 050	51	Dec. 4, 1926	6, 130
25			52		
26					
27					
		728, 775			649, 320

FROM: SPARROWS POINT, MD.

Page No.	Invoice date	Plates	Page No.	Invoice date	Plates
1	Jan. 6, 1925	17, 245	35	Feb. 8, 1926	45, 641
2	Jan. 8, 1925	39, 874	36	Feb. 9, 1926	80, 616
3	Jan. 13, 1925	12, 884	37	Feb. 13, 1926	59, 537
4	Jan. 14, 1925	66, 155	38	do	40, 368
5	Jan. 27, 1925	17, 336	39	Feb. 17, 1926	68, 539
6	Feb. 5, 1925	11, 645	40	Feb. 18, 1926	57, 477
7	Mar. 28, 1925	40, 246	41	Feb. 19, 1926	20, 035
8	Apr. 18, 1925	43, 331	42	Feb. 20, 1926	48, 156
9	May 2, 1925	34, 900	43	Feb. 23, 1926	45, 071
10	May 4, 1925	33, 843	44	Feb. 25, 1926	79, 546
11	June 24, 1925	27, 066	45	Feb. 27, 1926	45, 316
12	June 29, 1925	41, 460	46	Mar. 2, 1926	90, 072
13	Aug. 4, 1925	43, 435	47	Mar. 11, 1926	80, 489
14	Aug. 5, 1925	49, 341	48	Mar. 16, 1926	44, 806
15	Aug. 7, 1925	43, 175	49	Mar. 22, 1926	43, 969
16	Aug. 13, 1925	60, 564	50	Apr. 5, 1926	42, 200
17	Aug. 15, 1925	86, 412	51	May 25, 1926	33, 054
18	Aug. 21, 1925	60, 404	52	Aug. 7, 1926	29, 632
19	Sept. 14, 1925	53, 906	53	Aug. 19, 1926	74, 663
20	Sept. 28, 1925	37, 123	54	Aug. 20, 1926	117, 949
21	Oct. 7, 1925	72, 853	55	do	40, 890
22	Oct. 8, 1925	71, 730	56	Aug. 21, 1926	106, 860
23	Nov. 10, 1925	59, 898	57	Aug. 30, 1926	38, 577
24	Nov. 9, 1925	103, 383	58	do	58, 090
25	Nov. 10, 1925	58, 280	59	Sept. 3, 1926	103, 151
26	Nov. 11, 1925	68, 835	60	do	29, 821
27	Nov. 12, 1925	46, 010	61	Oct. 9, 1926	124, 945
28	Nov. 17, 1925	59, 498	62	Oct. 15, 1926	112, 004
29	do	64, 597	63	Nov. 3, 1926	29, 932
30			64	Nov. 30, 1926	66, 084
		1, 425, 429	65	Dec. 17, 1926	56, 175
31	Feb. 2, 1926	61, 676	66	Dec. 28, 1926	48, 865
32	Jan. 12, 1926	41, 951	67	do	29, 335
33	Jan. 20, 1926	42, 612	68	Dec. 31, 1926	49, 410
34	Feb. 4, 1926	39, 206	69		
			70		
			71		
			72		
			73		
			74		
					2, 226, 813

EXHIBIT 35

[Bethlehem Steel Co. exhibit No. 86. Witness: Crawford]

BEFORE THE INTERSTATE COMMERCE COMMISSION, INVESTIGATION AND SUSPENSION DOCKET No. 1929, IRON AND STEEL BETWEEN C. F. A. AND TRUNK-LINE POINTS

Statement of carload shipments of manufactured iron and steel articles forwarded from Johnstown, Pa., Jan. 1 to Sept. 30, 1923, inclusive, with information as to average loading per car, increase in freight charges under proposed rates, and earnings per ton-mile and per car-mile

Destination	Miles	Number of cars	Total weight (in pounds)	Average weight per car (in pounds)	Proposed increase in charges	Earnings at present rates		Earnings at proposed rates	
						Mills per ton-mile	Per car mile	Mills per ton-mile	Per car mile
Akron, Ohio.....	197	24	1,450,656	60,444	\$217.60	20.8	\$0.629	22.3	\$0.674
Aliquippa, Pa.....	99	2	105,120	52,560	26.28	29.2	.767	34.3	.901
Alliance, Ohio.....	161	322	30,430,463	94,504	9,129.14	23.6	1.115	27.3	1.290
Allison Park, Pa.....	88	7	532,580	76,083	79.89	21.6	.811	25.0	.950
Altoona, Pa.....	39	188	17,059,191	90,740	2,558.88	41.0	1.860	48.7	2.210
Apollo, Pa.....	54	1	48,273	48,273	7.24	35.1	.847	40.7	.982
Avondale, Ohio.....	156	1	85,838	85,838	38.63	22.4	.961	28.2	1.210
Barberton, Ohio.....	204	18	1,880,940	104,496	282.14	20.0	1.045	21.5	1.123
Beaver Falls, Pa.....	108	205	16,984,638	82,851	2,547.70	28.7	1.189	31.4	1.300
Barnesboro, Pa.....	48	1	38,217	38,217	9.55	54.1	1.034	64.5	1.233
Bentleyville, Pa.....	100	1	95,500	95,500	14.33	19.0	.907	22.0	1.051
Benwood, W. Va.....	143	1	42,470	42,470	12.74	24.4	.518	28.6	.607
Black Rock, N. Y.....	306	2	101,300	50,650	15.07	18.6	.471	18.3	1.463
Blairsville, Pa.....	27	1	62,506	62,506	9.38	59.3	1.850	70.4	2.196
Brackenridge, Pa.....	72	5	516,130	103,226	77.42	26.4	1.362	30.6	1.578
Bradford, Pa.....	182	1	72,130	72,130	13.61	31.3	1.129	130.8	1.111
Bridgeport, Ohio.....	143	2	67,820	33,910	20.35	24.5	.414	28.7	.485
Buffalo, N. Y.....	302	129	9,085,854	70,433	1,454.79	18.9	.665	18.5	1.651
Butler, Pa.....	88	12	614,130	51,177	92.12	21.6	.551	25.0	.638
Calvin, Pa.....	90	1	45,070	45,070	6.76	38.8	.873	42.2	.950
Carnegie, Pa.....	88	10	724,941	72,494	108.74	21.6	.782	25.0	.910
Charleroi, Pa.....	100	7	355,965	50,852	53.35	19.0	.483	22.0	.559
Claysville, Pa.....	114	7	387,665	55,380	116.30	30.7	.847	36.0	.994
Cleveland, Ohio.....	210	385	26,260,393	68,209	6,565.10	19.5	.665	21.9	.747
Connellsville, Pa.....	70	5	299,810	59,962	44.97	27.1	.810	31.4	.939
Corry, Pa.....	214	8	305,761	38,220	198.74	15.9	.304	22.0	.420
Cresson, Pa.....	24	1	38,520	38,520	15.78	79.1	1.519	66.6	1.279
Derry, Pa.....	32	1	38,562	38,562	5.78	50.0	.960	59.4	1.140
Du Bois, Pa.....	101	3	167,869	55,956	50.33	36.6	1.021	42.6	1.189
Dunkirk, N. Y.....	266	2	68,990	34,495	13.45	21.4	.368	21.1	1.363
East Greensburg, Pa.....	47	1	72,454	72,454	10.87	40.4	1.462	46.8	1.694
East Liverpool, Ohio.....	123	4	195,785	48,946	58.74	28.4	.696	33.3	.816
East Palestine, Ohio.....	128	37	3,250,695	87,857	975.21	27.9	1.226	32.0	1.406
East Pittsburgh, Pa.....	63	7	397,570	56,795	59.64	30.1	.855	34.9	.991
Economy, Pa.....	96	7	588,960	84,137	88.34	19.8	.831	23.0	.968
Ellwood City, Pa.....	123	2	107,810	53,905	16.17	25.2	.678	28.4	.764
Emlenton, Pa.....	125	10	843,010	84,301	168.60	25.6	1.080	28.8	1.215
Elyria, Ohio.....	235	11	1,001,280	92,025	400.51	17.4	.792	20.8	.946
Euclid, Ohio.....	210	9	635,494	70,610	158.87	19.5	.688	21.9	.773
Ebensburg, Pa.....	35	1	41,267	41,267	10.32	74.3	1.531	88.6	1.784
Farrell, Pa.....	147	1	39,483	39,483	11.84	23.8	.469	27.9	.550
Ford City, Pa.....	76	1	51,194	51,194	7.68	25.0	.638	28.9	.737
Franklin, Pa.....	160	1	58,090	58,090	29.05	21.2	.615	27.5	.798
Freedom, Pa.....	102	3	117,163	39,054	52.72	21.5	.478	34.3	.670
Glanford, Pa.....	83	12	677,277	56,439	101.59	22.9	.646	26.5	.747
Glassport, Pa.....	75	1	65,756	65,756	9.86	25.3	.530	29.3	.961
Greensburg, Pa.....	47	1	117,300	117,300	16.76	40.4	2.367	46.8	2.742
Greenville, Pa.....	145	77	6,962,972	90,428	2,688.89	24.1	1.089	28.3	1.280
Harmony, Pa.....	111	2	76,436	38,218	19.11	27.9	.533	31.5	.602
Holmesville, Pa.....	13	1	39,812	39,812	5.97	123.0	2.417	146.2	2.910
Homestead, Pa.....	75	7	442,640	63,234	66.40	25.3	.799	29.3	.926
Hooversville, Pa.....	19	1	37,312	37,312	5.60	84.2	1.566	100.0	1.860
Huff, Pa.....	48	9	580,935	64,437	87.14	39.6	1.275	45.8	1.475
Indiana, Pa.....	44	10	721,370	72,137	108.21	43.2	1.560	50.0	1.805
Koppel, Pa.....	114	1	39,800	39,800	3.98	28.1	.559	29.8	.593
Lackawanna, N. Y.....	302	5	279,859	55,971	113.99	18.8	.525	18.5	1.516
Latrebe, Pa.....	37	1	49,969	49,969	7.50	43.2	1.076	51.4	1.280
Laughlin, Ohio.....	120	42	3,317,855	78,996	995.36	29.2	1.150	34.2	1.347

1 Reduction.

Statement of carload shipments of manufactured iron and steel articles forwarded from Johnstown, Pa., Jan. 1 to Sept. 30, 1923, inclusive, with information as to average loading per car, increase in freight charges under proposed rates, and earnings per ton-mile and per car-mile—Continued

Destination	Miles	Number of cars	Total weight (in pounds)	Average weight per car (in pounds)	Proposed increase in charges	Earnings at present rates		Earnings at proposed rates	
						Mills per ton-mile	Per car mile	Mills per ton-mile	Per car mile
Leechburg, Pa.	61	1	38,856	38,856	\$65.83	31.1	\$0.603	36.1	\$0.700
Leetonia, Ohio	141	2	80,480	40,240	24.14	24.1	.484	29.1	.585
Leetsdale, Pa.	93	27	2,584,441	95,720	387.67	20.4	.975	23.7	1.133
Ligonier, Pa.	47	1	48,681	48,681	7.30	55.8	1.356	62.1	1.509
Marianna, Pa.	109	3	166,416	55,472	24.96	17.4	.482	20.1	.557
Martins Ferry Ohio	140	66	4,347,393	65,869	1,304.22	25.0	.823	29.2	.961
McIntyre, Pa.	63	1	65,600	65,600	16.40	50.7	1.663	58.7	1.930
McKeesport, Pa.	75	18	1,210,850	67,270	181.63	25.3	.855	29.3	.984
McKees Rocks, Pa.	82	60	6,237,428	103,957	935.61	23.2	1.204	26.8	1.584
Meadville, Pa.	176	12	840,255	70,021	420.13	19.3	.676	25.0	.875
Midland, Pa.	115	13	926,150	71,242	92.62	27.9	.993	29.5	1.050
Millvale, Pa.	81	4	194,420	48,605	29.16	23.4	.569	27.1	.659
Morado, Pa.	111	73	5,231,697	71,667	523.17	29.0	1.038	30.6	1.095
Mount Pleasant, Pa.	68	1	53,119	53,119	7.97	28.0	.742	32.3	.856
Nanty Glo, Pa.	43	1	45,159	45,159	11.29	60.5	1.361	72.1	1.622
Neville Island, Pa.	84	135	9,195,065	68,111	1,379.26	22.5	.767	26.2	.893
New Brighton, Pa.	106	1	50,800	50,800	7.62	29.2	.742	32.1	.815
New Castle, Pa.	128	8	434,198	54,274	130.26	27.3	.740	32.0	.867
Newton Falls, Ohio	164	9	415,396	46,155	124.62	21.3	.492	25.0	.578
Niles, Ohio	152	85	6,824,617	80,289	2,047.39	23.0	.922	26.3	1.055
North Warren, Ohio	158	168	17,971,133	106,971	5,391.34	22.1	1.180	25.9	1.383
Oil City, Pa.	170	29	2,365,305	81,562	1,182.65	20.0	.814	25.8	1.050
Parkview, Pa.	81	1	58,640	58,640	8.80	23.4	.686	27.1	.794
Penn. Pa.	53	18	1,372,965	76,276	205.94	35.8	1.364	41.5	1.581
Pittsford, Pa.	63	79	6,665,525	84,373	1,999.66	30.1	1.270	33.3	1.405
Pittsburgh, Pa.	78	398	27,333,877	68,678	4,100.08	24.3	.833	28.2	.967
Port Allegany, Pa.	99	1	53,570	53,570	12.68	57.6	1.539	56.5	1.509
Rankin, Pa.	70	1	40,400	40,400	6.06	27.1	.547	31.4	.634
Rochester, Pa.	104	103	6,230,963	60,494	1,557.74	29.8	.900	32.7	.988
Rockwood, Somerset County, Pa.	45	1	37,704	37,704	5.66	35.5	.667	42.2	.793
Saltsburg, Pa.	42	1	43,277	43,277	6.49	45.2	.976	52.4	1.132
Scottsdale, Pa.	63	2	118,676	59,338	17.80	30.1	.891	33.3	.986
Shafton, Pa.	55	5	466,340	93,268	69.95	34.6	1.612	40.0	1.864
Sharpville, Pa.	151	50	5,194,480	103,889	1,558.34	23.2	1.204	27.1	1.406
Sharon, Pa.	149	232	24,476,725	105,503	7,343.02	23.5	1.238	27.5	1.449
Smithport, Pa.	231	1	39,868	39,868	11.99	24.7	.492	124.3	1.484
Steubenville, Ohio	121	2	107,380	53,690	32.21	28.9	.775	33.9	.909
Swissvale, Pa.	70	1	109,060	109,060	16.35	27.1	1.477	31.4	1.711
Tarentum, Pa.	73	1	38,096	38,096	5.71	26.0	.497	30.1	.575
Titusville, Pa.	187	28	2,961,710	105,775	1,777.03	18.2	.961	34.7	1.832
Uniontown, Pa.	59	7	349,363	49,909	52.40	32.2	.963	37.3	1.115
Verona, Pa.	84	101	9,997,993	98,990	1,499.70	22.6	1.127	26.2	1.307
Warfwell, Ohio	158	3	167,099	55,700	50.13	22.2	.617	26.0	.723
Warren, Ohio	158	65	5,515,416	84,853	1,654.62	22.2	.941	26.0	1.102
Washington, Pa.	109	11	798,837	72,621	79.88	29.3	1.064	31.2	1.133
Wellington, Ohio	234	1	57,090	57,090	22.84	17.5	.481	20.9	.596
Wellsville, Ohio	128	2	111,046	55,523	33.31	27.3	.756	32.0	.886
West Monessen, Pa.	99	11	827,271	75,206	124.09	19.2	.722	22.2	.835
West Salisbury, Pa.	64	1	38,310	38,310	17.24	54.7	1.050	40.6	1.780
Wheeling, W. Va.	135	81	4,509,086	55,668	1,352.73	25.9	.721	30.4	.846
Youngstown, Ohio	143	112	8,655,935	77,285	2,596.78	24.5	.946	28.7	1.108
Grand total		3,656	294,480,951	80,547	2,742.37	230.7	2.936	235.1	2.1078

¹ Reduction.

² Average.

³ Divided as follows:

Advances	\$68,250.97
Reductions	508.60
Net advance	67,742.37

Nov. 19, 1923.

EXHIBIT 37

To the Stockholders of Midvale Steel and Ordnance Company, Inland Steel Company, Republic Iron and Steel Company:

After careful negotiations and consideration, the respective Boards of Directors of the three above-named Companies have approved the outline of a plan for the unification of the properties of the three Companies and have authorized the undersigned to formulate a final plan to be submitted to the respective Boards of Directors and when approved by them to be submitted to the stockholders of the different Companies.

So much erroneous interpretation of the proposed plan has been given publicity during the last few days that, pending preparation of the final plan, the undersigned make the following statement, which is based upon the reports of Messrs. Price, Waterhouse & Co. and Messrs. Arthur Young & Co., Public Accountants, and upon other documents and data which we believe to be reliable and correct.

All steps that will be taken in formulating the plan and in consummating the same will be subject to the advice of the respective counsel of the different companies.

It is proposed that the Midvale and Inland Companies will consolidate and merge and take the name NORTH AMERICAN STEEL CORPORATION. This Corporation, hereinafter called the Company, will acquire, subject to its liabilities, the assets of the Republic Company. Before the unification of the properties, Midvale will place its Nicetown plant and certain assets and liabilities connected with the operation of it in a separate Corporation, stock of which will be distributed pro rata among the stockholders of the Midvale Company, as hereinafter stated. This separate Corporation will thereafter continue as a separate enterprise for the manufacture of the ordnance, armor plate, and special steel products to which it is adapted.

CAPITALIZATION

Upon the consummation of the plan, the issued capital will be as follows:

Bonds and other Fixed Charge Obligations.....	\$79, 173, 500
New Preferred Stock of \$100 par value.....	50, 331, 475
Shares of New Common Stock without par value.....	3, 309, 612

The \$79,173,500 Bonds and Fixed Charge Obligations will consist of \$60,-599,500 Bonds and guaranteed obligations of the Midvale Company, or its subsidiaries; \$13,357,000 bonds and other obligations of the Republic Company or its subsidiaries; and \$5,217,000 Bonds and other obligations of the Inland Company, all of which, in addition to the other liabilities of the three corporations, are to be assumed by the Company.

The \$50,331,475 Preferred Stock is to be 7% cumulative and is to be convertible until July 1, 1934, into Common Stock at the rate of four shares of Preferred for five shares of Common. It is to be redeemable at the option of the Company at 115% and accrued dividends. Of the amount to be presently issued, \$25,000,000 par value is to be issued to provide in part for the acquisition of the properties of the Republic Company, and \$25,331,475 par value is to be issued and the proceeds thereof, amounting to \$24,064,901, is to be paid by the Company to the stockholders of the Inland Company.

The 3,309,612 shares of no par value Common Stock are to be issued as follows:

	Shares
To Midvale shareholders.....	1, 500, 000
To provide in part for the acquisition of the properties of Republic Iron & Steel Company.....	510, 000
To Inland shareholders.....	709, 281
To be sold for cash.....	590, 331

DISTRIBUTION OF SECURITIES

On completion of the Plan, each holder of one share of stock of Midvale Company will be entitled to receive:

- (1) Three fourths of a share of the New Common Stock; and
- (2) One-fourth of a share of stock of the corporation which is to take over the Nicetown Plant.

Each holder of one share of stock of the Inland Company will be entitled to receive:

(1) \$23.75 in cash and

(2) Seven-tenths of a share of the New Common Stock.

Each holder of one share of stock of the Republic Company will be entitled to receive:

(1) with respect to each share of Preferred Stock, one share of new Preferred Stock and an amount of cash necessary to provide for the then unpaid dividends on such Preferred Stock of the Republic Company;

(2) with respect to each share of Common Stock, one and seven-tenths shares of new Common Stock.

It is intended that a syndicate will be formed to provide for the cash requirements of the plan including the provision of \$20,000,000 additional cash working capital, which will make the total working capital of the Company over \$100,000,000.

Messrs. Kuhn, Loeb & Co. have agreed to act as bankers for the plan.

The plan contemplates that the Company will sell to Mr. Thomas L. Chadbourne, for services rendered 25,500 Common Shares at \$10 per share, and to Messrs. Kuhn, Loeb & Co., 59,500 Common Shares at \$10 per share.

FIXED CHARGES AND EARNINGS

It is estimated that upon the consummation of the plan, the fixed charges of the Company will amount to \$3,913,085 per annum (which is about 74c per ton of rated ingot capacity) and the Preferred Stock Dividends to \$3,523,203 per annum (which is about 67c per ton of rated ingot capacity). The total rated ingot capacity of the Company will be 5,249,000 tons per annum.

The book value as of December 31, 1921 (which is far below the present replacement figures) of total net assets of the Midvale, Republic, and Inland Companies, including the \$20,000,000 new cash working capital (but excluding the Nicetown Plant) totals about \$284,000,000.

The earnings of these three Companies (exclusive of the Nicetown Plant earnings) applicable to dividends on the Preferred and Common Stock, that is, after deduction of bond and other interest, Federal and other taxes and adequate depreciation, as compiled from the annual accounts for the ten years ending December 31, 1921, averaged \$20,462,248 per annum and were as follows:

1912-----	\$7, 435, 421	1917-----	\$60, 257, 399
1913-----	10, 164, 892	1918-----	34, 598, 221
1914-----	3, 379, 545	1919-----	11, 612, 487
1915-----	13, 702, 110	1920-----	22, 429, 534
1916-----	52, 595, 325	1921-----	(Loss) 11, 522, 446

Since the year 1916 the three Companies have expended more than \$120,000,000 for improvements and additional facilities, greatly increasing capacity and reducing operating costs so that the earnings reported for the past ten years do not fully reflect the earning power of the three Companies as now situated.

ADVANTAGES OF THE PLAN

Some of the essential reasons for the proposed unification of the properties of the Companies may be stated as follows:

(1) Increased economy, resulting from the mining of a larger tonnage of ore, coal and limestone under one control, together with the economic advantage of better distribution for the use of such products.

(2) Stronger management through the combined ability of the principal officers of the respective Companies to direct the operations.

(3) With plants located at Johnstown, Pa., Coatesville, Pa., Youngstown, Ohio, Niles, Ohio, and Chicago, Ill., and with facilities for steel production in the Southern field of Birmingham, Ala., the Company will be in better position to serve the consuming trade with a larger diversity of products and to effect a substantial saving in the selling and administrative costs.

The foregoing plan is subject to changes to meet conditions and circumstances and the opinion of counsel.

While the details of the organization of the Company have not been definitely settled, the undersigned will continue to be identified with its management.

CHADBOURNE, BABBITT & WALLACE and
A. H. WINTERSTEEN,
*Counsel, Midvale Steel and Ordnance
Company.*

MAYER, MEYER, AUSTRIAN & PLATT,
Counsel for Inland Steel Company.

SIMPSON, THATCHER & BARTLETT,
*Counsel for Republic Iron and Steel
Company.*

W. E. COREY,
*Chairman of the Board, Midvale Steel
and Ordnance Company.*

L. E. BLOCK,
*Chairman of the Board, Inland Steel
Company.*

JNO. A. TOPPING,
*Chairman of the Board, Republic Iron
and Steel Company.*

New York, June 7, 1922.

Source: Washington Herald, June 8, 1922

EXHIBIT 38

LACKAWANNA STEEL CO.
New York, September 13, 1920.

GIFFORD-WOOD CO.,
Hudson, N. Y.

DEAR SIR: We are in receipt of yours of the 7th instant inquiring for a tonnage of plates, shapes, and bars, and we are pleased to quote on not less than carload basis, plates at \$3.50 base per 100 pounds, and structurals \$3.25 base per 100 pounds Pittsburgh basis.

The established meaning of Pittsburgh basis is that the price is f. o. b. Pittsburgh, plus the official all rail freight rate in effect from Pittsburgh to destination on date of shipment, less the official all rail freight rate in effect from Seller's Works to destination on date of shipment, and that the point of delivery is f. o. b. mills, except when otherwise specifically stated.

We regret to notify you that on the 2 items of 40 lineal feet of 3½ by ½ inch flats, and 500 lineal feet of 3 by ½ inch flats we are unable to quote, due to the already overloaded condition in the mill on which this material is rolled. We could make delivery of this material within 60 days.

We trust we may hear from you shortly as to whether or not this is favorable, and beg to remain,

Yours very truly,

G. A. PENDERGAST,
District Sales Manager.

Source: F. T. C. Docket 962

EXHIBIT 39

GENERAL CONDITIONS IN THE IRON AND STEEL INDUSTRY, 1919-20-21 AS SHOWN IN ANNUAL REPORTS OF UNITED STATES STEEL CORPORATION FOR THE RESPECTIVE YEARS

The conditions in the iron and steel industry during the year 1919 as reflected by the operations of the subsidiary companies were varying. During the first 5 months a comparatively small amount of new business was offered. This was followed by an increasing demand and broadening market for steel products. During the second half of the year, however, owing to shortage in labor, labor difficulties at a number of the mills, the general strike in the bituminous-coal industry and insufficiency of transportation service, actual mill operations were seriously handicapped, the output during this period averaging only 67 percent of normal capacity, and in the month of October it was still lower. For the entire year of 1919 the output of finished steel products for sale averaged 74.5 percent of capacity.

On March 21, 1919, the Industrial Board of the Department of Commerce announced a schedule of prices for the principal standard steel products which, after extended investigation, it had concluded was fair and reasonable under

prevailing conditions. These prices were a substantial reduction from those which had previously been quoted by steel manufacturers generally. The subsidiaries of this Corporation promptly accepted this schedule and have since followed it, notwithstanding there has been a steadily increasing cost of operation and production, and that the demands of customers for materials would have permitted higher prices. The decision of the Corporation in this particular has been influenced by the heretofore announced reasons which from time to time in the past have decided its policy in respect of prices under conditions where the necessities of consumers induce them to bid up the market. At the close of 1919 the tonnage of unfilled orders of the subsidiary companies for rolled-steel products was 8,265,366 tons, in comparison with a total of 7,379,152 tons at December 31, 1918. (Annual Report of the United States Steel Corporation for the fiscal year ended December 31, 1919, p. 2.)

The demand for iron and steel products during the first 7 months of the year was large, the new business booked from month to month materially exceeding capacity. Beginning with August there was a slackening in the volume of orders offering. The new business accepted during the year with the considerable tonnage of unfilled orders carried over from 1919 enabled the properties of the subsidiary companies to operate to very nearly full capacity except as operations were interfered with, especially from April to July, inclusive, because of inadequate railroad service, arising principally from strikes and from shortage in fuel supplies. For the entire year the output of the steel plants, measured by the tonnage of finished products for sale, averaged 88.3 percent of total rated capacity. During the 4 months from April to July, the output equaled only about 80 percent of capacity. No change was made during the year in the domestic prices for the principal steel products which were in accordance with the schedule announced by the Industrial Board of the Department of Commerce on March 21, 1919, to which reference was made in last annual report. This price schedule was adhered to by the subsidiary companies notwithstanding the demand for steel was such during the first half of the year that higher prices could have been obtained. The price policy adhered to by the Corporation, however, enabled it, notwithstanding substantial increased costs arising from advances in labor rates, in freight rates, and higher costs for raw materials required to be purchased, especially fuel, to net considerable profits and to maintain operations at the degree above mentioned, also to carry forward to 1921 a large tonnage of unfilled orders. These latter at December 31, 1920, totaled 8,148,122 tons of various classes of steel products, in comparison with a total of 8,265,366 at the close of 1919. The unfilled tonnage at December 31, 1920, has since been reduced to 6,933,867 tons at March 1, 1921. (Annual Report of United States Steel Corporation for fiscal year ended December 31, 1920, p. 25.)

The marked decrease in the demand for iron and steel products which developed in the midsummer of 1920 continued until the early fall of 1921, when there was some improvement. As stated in the annual report for last year the subsidiary companies carried forward into 1921 a substantial tonnage of orders for steel products. This enabled them to operate at an average of somewhat over 70 percent of capacity during the first quarter. The degree of operations dropped in succeeding months and reached the low point for the year in July when the output was only about 29 percent. The average production for the entire year in rolled and other finished products for sale was 47.5 percent of capacity, the lowest ratio of production to capacity in any year since the organization of the Corporation. Concurrently with the decrease in demand for steel products there were marked declines in the prices obtained for nearly all classes of the same. These price reductions as a rule exceeded the decreases it was possible to effect in the cost of production through the reduction in unit prices of factors entering into cost of operations and the exercise of rigid economies. A number of elements in the cost of producing steel show little if any recession from war-time figures, notably that of railroad transportation, which on basis of existing rate conditions averages in the case of the subsidiary companies upward of 40 percent of the total cost of producing steel. At the close of the year the prices prevailing for some products were below the cost of production. Since the beginning of 1922, and to the date of writing this report, the new orders received have been equal to about one-half the total capacity of the plants of the subsidiary companies. (Annual Report of United States Steel Corporation for the fiscal year ended December 31, 1921, p. 24).

EXHIBIT 40

FIFTH ANNUAL REPORT TO STOCKHOLDERS OF MIDVALE STEEL & ORDNANCE CO.
(A CORPORATION OF THE STATE OF DELAWARE)7 WEST TENTH STREET,
Wilmington, Del.*To the Stockholders:*

The year 1920 began under rather unfavorable commercial and operating conditions. These improved somewhat in the spring, although impaired transportation continued to be a disturbing factor until late in the year.

In October a marked recession in trade began, so that our operations for November and December were materially curtailed. This necessitated a considerable reduction in selling prices, and to meet this condition we were compelled in December to announce reduction in wages and salaries, effective January 1, 1921.

A large part of the energies of our engineering and operating staff has been devoted during the year to extensive alterations, repairs, and renewals at Johnstown, the necessity for which was mentioned in our last report. The principal items in this program of rehabilitation and extension are shown on pages 16 and 17.

This work, as well as our regular operations, was hampered, especially during the first 9 months by lack of efficient labor, transportation difficulties, and delays on the part of outside contractors, but with improvements in these conditions we are now making rapid progress, and when trade conditions permit approximately full operations, we should secure substantial benefits in reduced cost of production.

In order to provide for these expenditures and others, the necessity for which may develop later, it has been the constant aim of the management to conserve our cash resources, which will account for the relatively large amount of cash, as shown by the balance sheet.

Our foreign trade, which is conducted through the Consolidated Steel Corporation, has been an important factor in the year's business. The abnormal condition of international exchange is a severe handicap in the selling of material for export. From present outlook, the volume of foreign business for 1921 will be less than for the previous year.

While the figures in this report apply only to the year ended December 31, 1920, these comments are being written late in February 1921, a considerable interval being required between the end of the year and the date of printing for the auditing of accounts. In view of their importance, it is deemed advisable to inform you as to some developments in trade conditions since the beginning of the year 1921. The halt in trade, which was in evidence at the close of the year 1920, continued through January 1921, so that the situation became extremely serious, not only to our stockholders, but especially to the thirty thousand (30,000) employees, who, under normal conditions, depend upon the operation of our mills for the daily living of themselves and their families.

While we appreciate the fact that the causes of the halt in trade are very complex, nevertheless we believe that one of the important factors in the hesitation of buyers was that they believed, and rightly, that the market for steel products was *falling*. The psychology of the situation was that no buying of any importance would be done until the consuming interests were convinced that the market had *fallen*.

We, therefore, on February 4, 1921, announced radical reductions in the selling prices of our standard rolled products. This action was taken, not with the expectation that it would immediately start a buying movement, but with the belief that such a step must be the first one taken in order to restore normal conditions.

We are confident that the principal underlying factor in the present trade depression is the fact that the general buying public believes there must be thorough liquidation in all commodities before a revival in trade can be expected. This, of course, involves further readjustments in labor rates, not only in the steel business but in all other industries, and a frank recognition of this condition by both employers and workmen is imperative.

It is extremely unfortunate, however, that there does not seem to be any immediate prospect for relief in one of the principal items of manufacturing costs, i. e., freight rates. The quantity of material which must be assembled for the production of 1 ton of plates, i. e., ore, fuel, limestone, and all of the various sup-

plies, is about twelve thousand (12,000) pounds, or six (6) net tons. A comparison of freight rates on these materials in effect July 1914, with present rates, shows an average increase of about ninety (90) percent.

Business is, therefore, confronted with the abnormal condition that, with some notable exceptions, the railroads cannot be operated profitably if these high rates are not maintained, and, on the other hand, general business will be seriously handicapped and tonnage of freight reduced unless railroad freights are included in the general scheme of liquidation. Manifestly, the only way out is for the railroads to reduce their operating costs also, the principal item of which is labor, so as to be in a position to establish lower freight rates.

In general, we believe that the first half of the year, at least, must be devoted to the solution of the above problems, which will require time and patience.

Respectfully submitted by order of the board of directors.

WILLIAM E. COREY, *Chairman.*
A. C. DINKEY, *President.*

EXHIBIT 41

[From the Iron Age, February 10, 1921]

IRON AND STEEL MARKETS

DEEPER PRICE CUTTING—MORE AGGRESSIVE POLICY OF INDEPENDENT COMPANIES—REDUCTIONS OF \$5 OR MORE HAVE NOT STIMULATED BUSINESS—ALL LINES AFFECTED

Announcement by the Midvale Steel & Ordnance Co. that it would quote prices low enough to bring business to its mills, some of which have been shut down since early December, has brought the steel market this week to a new stage in price readjustment. Thus far no large business has been done, but already cuts of \$5 per ton below the Steel Corporation's schedules are reported.

There are plentiful indications that other independent steel companies stand ready to take a share of the going business, even though realizing that under present conditions there will be no free buying. No definite price schedule is given out by any of the cut-price sellers, the policy being to get sufficient orders for a mill operation up to the average of independent mills.

The products chiefly affected thus far are plates, structural shapes and bars, on which the Steel Corporation prices have been 2.65, 2.45, and 2.35 cents, respectively. Sales of plates at 2.40 cents are reported, of shapes at 2.25 cents and of bars at 2.10 cents. There is no other expectation than that the whole range of rolled products, with the exception of rails, will now be offered at lower prices.

The crux of the new situation is the extent to which the wage reductions already made by some independent producers will allow them to go below Steel Corporation prices. These reductions have been from 15 to 25 percent. One independent company has made a second reduction of 15 percent. In the Youngstown district wage reductions are expected by the middle of February. At present high freights on raw materials there are mills whose range of action under free competition will not be great.

In all the trade's comment on the new turn in prices its effect on the Steel Corporation's position has been uppermost. The Corporation's operations, while not equally full in all lines, are still at an 80 to 90 percent rate, and there is no indication of an early change in its policy as regards either wages or prices. Leading independent mills have run at 20 to 35 percent in the past week (p. 400).

PITTSBURGH

PITTSBURGH, *February 8.*

This week has developed the first definite step looking toward the uncovering of demand so long dammed up because buyers have not regarded the prices of the Steel Corporation as the ultimate minimums. The Midvale Steel & Ordnance Co. has instructed its sales offices to find out the prices at which orders can be secured and also has granted authority to take the business. The drive on the part of this company has resulted in definite orders of tonnages of the major products at well below the regular market quotations. Since the instructions were not written, it is difficult to obtain actual information as to the prices named, but it has been verified that it named 2.25 cents, Pittsburgh, on shapes and bars. Unverified reports have been current of quotations of 2 cents on bars and it also is rumored that the same price was named against a tonnage of plates in the Chicago district.

Other independent interests have done nothing in the matter of price cuts, but it is patent that in the event any business is uncovered by the company which is active in this respect the others will go along. So far as can be learned, the effort to interest buyers in purchases at practically their own prices has not been successful. This, however, was to be expected, in view of the fact that the first effect of a sudden reduction in prices usually is to make buyers cautious. The Steel Corporation subsidiaries meanwhile are holding to the level of prices which it has observed now for almost 2 years, and apparently they are content to wait to see what success attends the efforts of independent companies to secure business at lower prices before taking any action either as regards selling prices or wages. It is pretty well established that the cutting of prices by independent companies is to be accompanied by lower wages, and since the rates of Pittsburgh and Youngstown companies have not yet been disturbed, it is figured that the acceptance of business at the prices named would involve a cut in wages of as much as 30 percent. The market is even duller than it has been as a result of the apparent willingness of independents to consider lower prices, and prices are even more indefinite now than they have been at any time since the reaction in business set in last fall (pp. 400-401).

[From The Iron Age, February 17, 1921]

LOW OPERATING RATE

REDUCTION OF PRICES DOES NOT INCREASE ORDERS IN THE MAHONING VALLEY

YOUNGSTOWN, OHIO, February 15.—Mahoning Valley independents, on a lower cost basis, are underbidding the Steel Corporation for business and are quoting prices on plates, sheets, and bars below the Industrial Board level. The market is still more or less indefinite. Manufacturers believe the recession to a lower cost level, enabling them to quote lower prices, will stimulate buying to some degree, though to what extent is a matter of speculation. That orders on the books of the leading makers have been reduced to bedrock is indicated by the experience of a sheet maker last week. The operating schedule provided for complete suspension during the week of the sheet-mill department. On Tuesday an order was booked which permitted the mills to operate the last 3 days of the week, following which they were again suspended. Much of the current business, therefore, is for day-to-day production and schedules are adjusted accordingly. While buyers have been placing orders only against pressing requirements, a freer buying movement is expected with lower prices. One district maker has reduced sheets uniformly \$3 a ton, and is quoting No. 28 black 4.20 cents, No. 28 galvanized 5.50 cents, and No. 10 blue annealed 3.40 cents. Another producer is meeting the Midvale Steel quotation of 2.25 cents on plates * * * (p. 460).

IRON AND STEEL MARKETS

STEEL OBTAINABLE \$5 BELOW STEEL CORPORATION LEVELS—STEEL-MAKING IRON CUT—BUYING POSTPONED AND OPERATIONS RECEDING

Developments have met expectations. The price cuts clinched business known to be urgent, but have postponed those purchases which could be held back for the time being. As natural, wild rumors are afloat of quotations much below those of actual transactions, and lowest dependable prices are difficult to name. Bookings have been made at the Steel Corporation's levels, but also at prices fully \$5 under these. It has become apparent that buying is dropping below one-fourth of the country's capacity. * * *

Finished steel and possibly also semifinished material are now quite generally obtainable at \$5 per ton below the Steel Corporation prices. Steel bars have been sold at prices ranging from 2 to 2.35 cents, Pittsburgh, with 2.25 cents freely quoted and 2.10 cents the market at the moment. Steel plates in even moderate amounts command no more than 2.25 cents, with structural steel at 2.25 and 2.20 cents. Black sheets have been moved at 4.10 cents, Pittsburgh, and at 5.35 cents for the galvanized product, and blue annealed sheets, particularly in the heavier gages where there is competition with plate mills, 3.15 cents has been done, this last representing a drop of \$8 a ton in 2 weeks. Independent nail quotations range from \$3.10 to \$3.25 per keg, while plain and galvanized wire is down \$5 from the quotations of a week ago * * * (p. 468).

PITTSBURGH

PITTSBURGH, *February 15.*

While the price cuts recently made by a large independent steel interest and followed by others to some extent have uncovered some business, the results of the drive, viewed in a broad way, have been disappointing. Buyers are taking hold with even less freedom than they did prior to the change in independent company price policies, and are more impressed with the possibility of obtaining even greater concessions than already have been offered. Some prospective business undoubtedly has been uncovered by the cut, but in a general way it must be said that buyers have been inclined to use the quotations named by one company to pry loose even lower prices from some other company. There is nothing at all definite or fixed about the prices of most of the independent companies at the moment, and the actual basis of business usually is upon firm offers of buyers. As far as its effect upon the price and wage policies of the Steel Corporation is concerned the course pursued by the independents in the matter of price and wages has been nil. The Steel Corporation subsidiaries are holding rigidly in all directions to the schedule it has observed, for practically 2 years, and not even intimations of lower wages are heard * * * (p. 468).

[From the Iron Age, February 24, 1921]

IRON AND STEEL MARKETS

The Carnegie Steel Co. now has 43 furnaces in blast, two less than last week. The American Steel & Wire Co. is operating well below a 50-percent basis, and the American Sheet & Tin Plate Co. has failed to maintain the recent 70-percent activity, showing a loss in sheets rather than in tin plate, possibly through the holding back of shipping instructions in the face of independent prices \$5 and \$7 lower.

Steel bars are easily obtained at 2.10 cents, Pittsburgh basis, but sales have been made at 2 cents, and 1.95 cents has been quoted. Plate quotations range from 2.15 to 2.20 cents, though here also 2 cents has been named, with doubt now that business could be done at this basis except on an unusually attractive lot * * * (p. 528).

PITTSBURGH

PITTSBURGH, *February 21.*

The drive for business at cut prices on the part of some of the independent steel companies seems to be falling short of attaining its purpose, in that those which have been most active in the pursuit of orders are not materially busier than they have been, and the fact that one large independent maker in Pittsburgh again is quoting the Steel Corporation levels on most products, after having indicated a willingness to meet competitive prices, would rather indicate that not a great deal of business actually exists at any price at present. The effect of the low prices named by the independents has not been to fill their order books, but rather to make buyers more conservative, and this tendency has been felt by most of the Steel Corporation subsidiaries, which, because of lighter specifications, are not as busy as they were recently. The effect upon the Steel Corporation order book, however, is not nearly as great as might be expected, for the reason that in a number of products, notably merchant bars, the corporation is practically alone in being able to make prompt deliveries, and the delivery, rather than the price, is what counts with those who actually require tonnages. Buyers who have been interested in the market by low quotations invariably have asked for early delivery as a condition of purchase. Since the amount of business presented has been in only a few cases sufficient to provide a fair rolling schedule and so much independent capacity is idle at present, the best delivery promised by a number of those naming lower prices than the corporation has been 6 weeks.

There continues to be considerable interest with regard to the probable future course of the Steel Corporation as to prices and wages. Some see in the diminishing rate of operations by the subsidiaries the possibility of early action on selling prices, but it must be said that no such impression is gained at the offices of the corporation constituents in this district * * * (pp. 528, 529).

[From the Iron Age, March 3, 1921]

REDUCED PRICES QUOTED TO THE GOVERNMENT

WASHINGTON, March 1.—Recent reductions in prices made by independent steel companies were reflected in bids opened by the Bureau of Supplies and Accounts, Navy Department, last Friday. They involved 350 tons of base gage plates 60½ to 96 inches, 190 tons of medium rivet rods and 240 tons of reinforcing deformed steel bars. The Cambria Steel Co. submitted a bid of 2.80 cents, delivered Philadelphia, on the plates, which, allowing for the 10 cents per 100 pounds extra for Navy specifications, is equivalent to 2.35 cents base, Pittsburgh. Recommendation has been made that this company be awarded the contract. Delivery is promised in 15 to 21 days. The Cambria company also was the lowest bidder, making a guaranty on the rods, ¾ to 1 inch 15 to 18 feet at 2.70 cents, delivered Philadelphia, or equivalent to 2.25 cents base, Pittsburgh, after allowing for Navy specifications * * * (p. 582).

The Midvale Steel & Ordnance Co. is operating its Johnstown plant at about 40 percent of capacity. Other independents do not appear to have fared nearly so well in the drive for business, and taking those companies located in the Valley district, Pittsburgh and Wheeling, it may be said that 20 percent of capacity operations is a liberal estimate of what they are doing today. * * * (Pp. 590-591.)

[From the Iron Age, March 10, 1921]

IRON AND STEEL MARKETS

* * * * *

It is doubtful if the independent steel mills are operating at as high as 20 percent of capacity. The booking by one such steel maker of a total of 1,000 tons in 51 different orders is an index of the situation. * * * (P. 654.)

PITTSBURGH

PITTSBURGH, PA., March 8.

* * * Willingness on the part of several of the independent steel manufacturers to accept business in the major products has been no more effective in securing orders in the past week than it was when the drive first started. The explanation for this condition is to be found in the fact that buyers have sought to place small tonnages while the mills which have quoted the lowest prices have been interested only in those that would assure them of a run of some duration. A quotation of 2 cents on plates, shapes, and bars and of even less of the last-named product has been heard frequently, but it has been the experience of buyers who have attempted to place orders of from 100 to 200 tons at that price that none of the price-cutting manufacturers was willing to enter the business except at an advance of \$2 to \$3 over that figure. The opinion is confidently expressed that a sizable tonnage of plates and shapes could be placed readily at 2 cents, Pittsburgh, but on a large majority of the inquiries now coming out, which are for relatively small tonnages, 2.10 cents has been as low as any of the companies has been willing to go. * * * (P. 655.)

[From the Iron Age, March 31, 1921]

IRON AND STEEL MARKETS

* * * * *

Comment in the trade on possible price and wage reductions by the Steel Corporation has turned on the fact that the Corporation's earnings for 1920, if assigned entirely to steel products, represent \$12.82 per ton. The losses of some independent companies on quotations \$7 to \$13 per ton below those of the Corporation are not offset by wage reductions thus far made, and lower prices and lower wages by the Steel Corporation may mean further wage reductions at other works. * * * (P. 866.)

[From the Iron Age, April 14, 1921]

PITTSBURGH

PITTSBURGH, April 12.

The week has been featured by a revision of prices by independent steel manufacturers which for unanimity has few parallels in the recent history of the industry or since ruinous competition gave way to stabilized prices. While the revision has resulted in higher prices than independents previously had been accepting on most products, there have been a few striking exceptions. These include wire rods, the independent price on which now is \$48 for the base size as compared with the former quotation of \$52; tin plate, in which there has been a cut of \$10; per ton; and in steel pipe, the price of which has been reduced \$10 per ton by the Mark Manufacturing Co., and which action appears likely to be followed by other independent manufacturers. All of the independents now are quoting steel bars at 2.10 cents, base, Pittsburgh, and 2.20 cents, base, Pittsburgh, represents the minimum-price idea of all manufacturers except the Steel Corporation on shapes and plates. The revision of sheet prices has resulted in the adoption of minimums of 3 cents for blue annealed, 4 cents for black, and 5 cents for galvanized sheets. Wire nails have been advanced \$5 per ton, and independent quotations on other wire products, with the exception of plain wire, now are identical with those quoted by the American Steel & Wire Co. While the new bases yet have to be established by actual sales, it is worthy of note that now, unlike previous attempts to bolster prices, all of the independents are giving voice to a preference to shut down their plants rather than to shade the new quotations. Complete suspension is now regarded as preferable to the heavy losses which former quotations meant, and which, contrary to expectations, failed to stimulate business. With all independents now observing the same prices and unprofitable competition eliminated, it is hoped that business held up by the uncertain price conditions will come out. Besides the consideration of the heavy loss which the old price entailed, it is believed that the independent companies in taking this new position on prices had in mind the revision which it is expected the Steel Corporation will make at an early date. * * * (P. 999.)

IRON AND STEEL MARKETS

CORPORATION PRICES DOWN—MIDDLE GROUND REACHED AS INDEPENDENTS ADVANCE—MORE ACTIVITY AT LOW PRICES PRECEDING THE ANNOUNCEMENT OF THE NEW SCHEDULES

Steel Corporation prices and those of a number of independent steel companies have become identical on some products and in close relation on others, as the result of several interesting developments of the past few days. The new turn has caused more stir than the steel market has known in months, and its effect on the volume of business is being widely canvassed.

Late last week several independent steel manufacturers announced an advance of \$2 per ton in steel bars and of \$2 to \$4 per ton in plates and structural shapes. On Tuesday afternoon, April 12, the Steel Corporation made public a list of reductions in its prices, effective on the following day, which brought bars down from 2.35 cents to 2.10 cents, Pittsburgh, and plates and shapes from 2.65 cents and 2.45 cents, respectively, to 2.20 cents.

The Steel Corporation also reduced billets from \$38.50 to \$37; sheet bars from \$42 to \$39; wire rods from \$52 to \$48, and tin plates from \$7 to \$6.25 per box or by \$15 per net ton. It retained wire products at \$3.25 for wire nails and \$3 for plain wire.

Some consumers had intimations last week of the expected action of certain independent companies. It was stated that the lower prices recently named had brought out little business and had resulted in losses. Buyers were allowed to cover at the lower prices just before the advance, and as a result bookings last week were larger than the average for March.

No announcement concerning wages is made by the Steel Corporation, but it is estimated that if its sheet and pipe prices, which do not appear in the published list, are reduced to those lately quoted by independent producers, its entire output will have come down an average of \$7 to \$8 per ton. Its 1920 earnings, if all credited to steel, represented \$12.82 per ton. * * * (P. 998.)

[From The Iron Age, April 21, 1921]

IRON AND STEEL MARKETS

BUYING STILL LIMITED—CONSIDERABLE BUSINESS AT FORMER LOW PRICES—
MARKET TURNS ON FREIGHT RATE REDUCTIONS—JAPAN BUYING SHEETS AND
COPPER

The chief effect of the coming together of independent and Steel Corporation prices by the raising of the former and the lowering of the latter was the closing of business by the independent companies on which they had made quotations below the new level.

Thus the bulk of the new orders of the past week has gone to the independents, but at the same time the Steel Corporation has been helped by the reinstatement of business which had gone off its books while it was maintaining Industrial Board prices.

There is no indication that consumers will change their policy of limited buying. Generally they count on further revisions of prices as the result of the expected reduction in freight rates. In addition, the Steel Corporation's policy in respect to wages is admittedly a factor in the determination of future prices.

Published predictions of larger building operations because of the Steel Corporation's reduction of \$5 in structural shapes are received with reserve by fabricators. The cut in steel is of small moment in comparison with the high labor scales in all building trades. * * * (P. 1060.)

[From The Iron Age, May 12, 1921]

PITTSBURGH

PITTSBURGH, May 10.

Steel prices again are beginning to take on a somewhat ragged appearance, due to the fact that here and there anxiety on the part of some of the independent producers to secure business has led to substantial concessions from the stabilized levels, but some makers are not prepared to yield. The outstanding cases of this sort are found in hot-rolled strip steel, wire nails, and sheet bars, which in the week under review have gone at lower than the April 13 schedules. The Ford Motor Co., which recently put out an inquiry for 4,000 tons of hot-rolled strips and for 5,000 tons of cold-rolled strips, has placed the former at 2.40 cents, base, Pittsburgh, a concession of \$7 per ton from the regular market quotation, while the Texas Co., which is seeking 4,200 kegs of wire nails, was quoted \$3 base per keg, Pittsburgh, or \$5 per ton below the recently established quotation. Labelle Iron Works has placed 2,000 tons of an inquiry amounting to 5,000 tons of Bessemer sheet bars, at below the stabilized quotation of \$39, Pittsburgh or Youngstown. * * * (P. 1258.)

[From the Iron Age, June 23, 1921]

IRON AND STEEL MARKETS

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There is no longer any strict adherence to the prices announced by the Steel Corporation as effective April 13. Reports have gone through the trade that a formal announcement of lower prices would be made July 1. However, market developments appear to be making any such formality unnecessary. All producers are meeting competition as it develops.

The market on bars and structural shapes is now about 2 cents, while 1.90 cents for plates, or \$6 per ton below the April 13 price, is not uncommon. In the Chicago market the weakness in bars is more pronounced. Sheets are now about \$5 per ton below the April schedule and bolt and nut discounts have been revised downward. * * * (P. 1708.)

[From the Iron Age, July 7, 1921]

IRON AND STEEL MARKETS

* * * * *

The reductions in prices of various steel products formally made on July 5 by the Bethlehem Steel Co., amounting to \$4 per ton for bars, plates, shapes, billets, skelp, sheet bars, and blue-annealed sheets, \$5 for black and galvanized

sheets and \$10 for tin plate, have been met by such of the other producers as were not already selling at the new Bethlehem levels. The fact is that as to some products the announcement merely recorded what the market already had done.

That the Steel Corporation will meet the market is inferred from recent evidence that the schedule of April 13 was not rigidly observed by some of its subsidiaries. Formalities of publication, as followed by the Bethlehem Co., tend to make the adjustment of the industry to lower prices gradual and somewhat orderly. * * * (P. 32.)

PITTSBURGH

PITTSBURGH, *July 5.*

The new schedule of prices announced by the Bethlehem Steel Corporation is received here with mixed emotions. The reductions have been generally adopted by other independent companies and while official announcement is yet to be made, it is believed that the new prices will be adopted by the Steel Corporation. As a stimulus to business, nobody expects that the new schedule will be any more beneficial than the old one, for the reason that the prices named had been fairly generally quoted against attractive inquiries previously. The claim is made in some quarters that some business which was near the closing stage has been deferred as a result of the announced reduction. Publication of a new price schedule on the minor products still is to be made, but it is expected that the revision will be completed by the end of the week and that then the Steel Corporation will adopt all of the new schedule. * * * (P. 32.)

[From the Iron Age, July 21, 1921]

IRON AND STEEL MARKETS

PRICE CUTTING GENERAL—MORE CONCESSIONS IN PLATES, SHAPES, BARS, AND SHEETS—SHARP COMPETITION IN THE CHICAGO DISTRICT—RAILROAD BUYING INCREASING

Cutting of the steel prices announced early in July has been more general in the past week, particularly in plates, structural shapes, reinforcing bars, and sheets. The favorable feature has been that more business has come up. In the eagerness of producers to get a share of it, prices suffered.

Railroad and construction demand are responsible for most of the week's activity in plates and shapes and the accompanying concessions of \$3 to \$5 per ton in the prices of the two products. The buying was not such as to indicate any change in the general situation, much of it having been in sight recently awaiting favorable prices.

Steel-works operations are on a smaller scale in some districts and in others practically unchanged. The Youngstown district in particular is at a low rate.

Aggressive competition between Steel Corporation and independent steel has been seen in the Chicago market. Pittsburgh basing has gone by the board in that district and on a small plate order from a railroad 1.80 cents, Chicago, was done. Presumably lower prices were made on 3,000 tons of steel for car repairs, 2,600 tons placed by one fabricating company and 1,200 tons by another. The week's transactions at Chicago show that the extent to which the announced prices are cut depends entirely on the size and character of the order and the hunger of the mill.

At Philadelphia a 5,000-ton order for plates and shapes for a fabricating company went at 1.75 cents, Pittsburgh, for the plates and 1.80 cents for the shapes, whereas both are presumably 2 cents, Pittsburgh. Several lots of about 1,000 tons, reported in the New York market, brought out prices of 1.80 cents and 1.85 cents, and in one case 1.70 cents. * * * (P. 158.)

[From The Iron Age, September 1, 1921]

PITTSBURGH

PITTSBURGH, *August 30.*

Reports about business covering the past week are of a slightly less cheerful tenor, but there is nothing to suggest that the lull is anything more than temporary and a natural development in view of the fact that there has been a comparatively steady demand for more than a month. The recent announcement by Judge

Gary that the Steel Corporation hereafter would meet competitive market prices was received with keen interest. His words were as follows:

"When the subsidiaries of the Steel Corporation ascertain to a certainty that large and important independents, so-called, are selling at prices materially lower than those which have been heretofore announced, our subsidiaries meet the new prices. They do not precipitate or lead in establishing lower prices, for they are aware that the prices which have prevailed for some time past are lower than the actual cost of production by most if not all of the producers."

The prevailing opinion is that the pronouncement has clarified the situation and that the fact the Steel Corporation now will sell as low as anyone else is likely to exert a restraining influence on promiscuous cutting of prices. This will probably mean less selling to recognized regular customers of the Steel Corporation by independents, because such buyers now will be able to match the lowest prices named by independents with those of the Steel Corporation subsidiaries. * * * (P. 552.)

IRON AND STEEL MARKETS

MEETING COMPETITION—NO NEW PRICE POLICY BUT SOME FRESH DECLINES—
SHEET REDUCTION GENERAL, BUT TIN-PLATE MARKET NOT UNSETTLED—NEW
PLATE INQUIRY

In the varying reports from different branches of the steel industry the balance is still on the side of betterment in demand, but with no clear indication of progressive improvement ahead. Exhaustion of inventories is more marked as the occasion of buying.

Steel Corporation activities still average a fraction under 30 percent, with the Carnegie Steel Co. running at a lower rate than in recent weeks, while the Tennessee company, owing to export and other contracts and to the improvement in the South, is at nearly half of full operation.

The competitive aspect of the market has not changed, despite widespread reports attributing a more aggressive policy to the leading producer. Actual transactions show that both the Steel Corporation and the leading independent producers are following their practice of many weeks, making such concessions as are required by new developments. * * * (P. 552.)

[From The Iron Age, December 15, 1921]

LOW PLATE PRICES

MAHONING VALLEY MILLS COMPETE WITH THE EAST—LITTLE SHEET BUYING

Competition from eastern plate mills

While the plate market continues to show more life, prices are still so far out of line that only one interest in the Mahoning Valley is producing merchant plate, the Brier Hill Steel Co. The Youngstown Sheet & Tube Co., which has been out of the market indefinitely, has no intention of reentering it under present conditions. Plate production of the Republic Iron & Steel Co. consists wholly of material for pipe manufacture. A sales executive states that 1.50 cents represents the top and not the bottom of the plate market and that tonnage is being freely placed at this figure. A number of interests which have been regular buyers of plates from Valley producers have been obliged, under these circumstances, to purchase tonnage elsewhere. One of the most striking instances recently involved 20,000 tons of plates sought by a Shenango Valley fabricator which had been a consistent buyer from a Valley maker for many years. An eastern interest, however, offered to produce the plates at a price which the Valley maker could not touch and for that reason the business went elsewhere. Most of the current inquiry in the plate market emanates from builders of oil storage tanks and from car-repair plants. * * * (P. 1578.)

EXHIBIT 42

PHILADELPHIA, PA.

ARCHBOLD BRADY Co.,
Syracuse, N. Y.

AGENCY: NEW YORK.

BOUGHT OF CAMBRIA STEEL CO.

FRANKLIN WORKS

JULY 28, 1921

Shipped from Johnstown, Pa., to Archbold Brady Co., Syracuse, N. Y.

Bill No. F-1685.

Freight: Collect.

Route: Pennsylvania Railroad by way of West Shore Railroad.

Cars			Description per bill of lading, 51500	Weight
Initials	Numbers	Capacity		
P. & R.....	7431	140	61 steel angles..... 174 steel channels..... Total..... Dunnage, 75 pounds.	46,860 22,325 69,185

Order Nos.		Heat or blow No.	Price No.	Pieces	Description	Weight per foot or thick- ness	Length		Weight	Marks
Customer	Mill						Feet	Inches		
9139	51866		N 9073		OH steel angles..					9139
7/15/21		L 19062		10	3½ by 2½	4.9	40	0	1,960	
Spec. 502B		do.		10	do.	4.9	46	0	2,254	1.90
		L 17040		8	8 by 6	23.0	29	6	5,428	
		L 21048		8	do.	23.0	31	0	5,704	
		do.		6	do.	23.0	33	0	4,554	
		L 2093		8	do.	23.0	34	6	6,348	
		do.		4	do.	23.0	36	0	3,312	2.00
				54					29,560	

RECAPITULATION

Material	Weight	Price	Amount
Terms: Net cash within 30 days or one-half of 1 percent discount if paid within 10 days both from date of invoice.....	4,214 25,346	\$1.90 2.00	\$80.07 506.92
March totals.....	29,560		586.99
F. o. b.: Johnstown, Pa.			

NOTICE.— Make remittances in New York Exchange to order of Cambria Steel Co., and address treasurer, Widener Building, Philadelphia, Pa. Right is reserved to draw without notice for all accounts past due. Interest at 6 percent will be charged on overdue accounts. Claims for errors, deficiencies, or imperfections will not be considered unless made with reasonable promptness after receipt of material. Material found defective when in hands of original purchaser and when used for the purpose for which sold, will be replaced, but no claim for labor or damage will be recognized. Cambria Steel Co. will not be liable for loss or damages arising from nonfulfillment of contract by reason of accidents, fire, strikes, transportation delays, or other causes beyond its control. As required in rule 3, uniform bill of lading, consignee should notify railroad agent promptly at destination in writing in case of shortage or damage en route in order to substantiate formal claim when presented.

EXHIBIT 43

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET NO. 962

The following is a partial Abstract of invoices contained in the record herein rendered by Lackawanna Steel Co. to Kellogg Structural Steel Co., August Feine & Sons Co., Ferguson, Allen Co., and Buffalo Structural Steel Co., Buffalo, N. Y., during portions of the years 1921 and 1922, showing—

(a) The prices charged on base sizes of plates, shapes, and bars, "f. o. b. mill, Lackawanna, N. Y."

(b) The then current price charged by Carnegie Steel Co., "base Pittsburgh."

(c) The then current freight rate from Pittsburgh to destination, carloads or less than carloads, as the case may be.

(d) The "Pittsburgh equivalent" price.

(e) The then current price at Pittsburgh, as quoted in The Iron Age.

Where base sizes are determined by the subtraction of extras for size, such extras are those shown in "Maximum Prices on Iron and Steel Products," issued by American Iron & Steel Institute.

Exhibit No.	Date of invoice	Price f. o. b. Lackawanna, N. Y.			Price of Carnegie Steel Co., base Pittsburgh			Freight rate from Pittsburgh to Buffalo	Pittsburgh equivalent			Then-current Pittsburgh price as quoted in The Iron Age		
		Plates	Shapes	Bars	Plates	Shapes	Bars		Plates	Shapes	Bars	Plates	Shapes	Bars
2535	Nov. 3, 1921.		\$1.60	\$1.60		\$1.75	\$1.60	\$0.205		\$1.305			\$1.60	\$1.50
2539	do.					1.75	1.60	.295		.295				
2544	Nov. 4, 1921		1.60	1.50		1.75	1.60	.295		1.305	\$1.305		1.60	1.50
2546	Nov. 7, 1921		1.60			1.75	1.60	.295		1.305	1.205		1.60	
2555	Nov. 5, 1921		1.60			1.75	1.60	.295		1.305			1.60	1.50
2558	Nov. 4, 1921		1.60	1.50		1.75	1.60	.295		1.305	1.205		1.60	
2561	Nov. 4, 1921		1.60			1.75	1.50	.295		1.305			1.50	1.50
2563	Nov. 11, 1921		1.60	1.50		1.75	1.50	.295		1.305	1.205		1.50	1.50
2564	do.			1.50			1.50	.295					1.50	1.50
2567	Nov. 18, 1921		1.60			1.60		.295		1.305		\$1.50		
2569	do.	\$1.60			\$1.60			.295		1.305		1.50		
2570	Dec. 7, 1921	1.60			1.60	1.50		.295		1.305	1.205		1.50	1.50
2572	Dec. 8, 1921			1.50		1.50		.295		1.305			1.50	
2575	do.		1.60			1.50	1.50	.295		1.305	1.205			1.50
2579	Dec. 12, 1921			1.50		1.50		.295		1.305			1.50	
2581	do.							.295				1.50		
2582	Dec. 13, 1921		1.60		1.50	1.50		.295		1.305			1.50	
2586	do.					1.50		.295		1.305		1.50		
2589	Dec. 15, 1921		1.60		1.50	1.50		.295		1.305		1.50		
2592	Dec. 13, 1921	1.60			1.50			.295		1.305	1.205		1.50	1.50
2596	Dec. 20, 1921		1.60			1.50		.295		1.305			1.50	
2597	Dec. 21, 1921		1.60	1.50		1.50		.295		1.305	1.205		1.50	1.50
2599	Dec. 21, 1921		1.60			1.50	1.50	.295		1.305			1.50	
2602	Dec. 28, 1921		1.60			1.50		.295		1.305	1.205		1.50	1.50

Exhibit No.	Date of invoice	Price f. o. b. Lackawanna, N. Y.			Price of Carnegie Steel Co., base Pittsburgh			Freight rate from Pittsburgh to Buffalo	Pittsburgh equivalent			Then-current Pittsburgh price as quoted in the Iron Age		
		Plates	Shapes	Bars	Plates	Shapes	Bars		Plates	Shapes	Bars	Plates	Shapes	Bars
2603	Dec. 24, 1921		\$1.60			\$1.50		\$0.295		\$1.305			\$1.50	
2607	Dec. 29, 1921		1.60			1.50		.295		1.305			1.50	
2608	do		1.60			1.50		.295		1.305			1.50	
2610	Jan. 2, 1922	\$1.60						.295				\$1.50		
2612	Jan. 9, 1922		1.60			1.50		.295		1.305			1.50	
2613	do		1.60			1.50	\$1.50	.295		1.305	\$1.305		1.50	\$1.50
2614	Jan. 10, 1922		1.60			1.50		.295		1.305			1.50	
2616	Jan. 18, 1922		1.60			1.50		.295		1.305			1.50	
2617	do		1.60			1.50		.295		1.305			1.50	
2618	do							.295						
2619	Jan. 12, 1922		1.60			1.50		.295		1.305			1.50	
2621	Jan. 17, 1922		1.60			1.50		.295		1.305			1.50	
2622	do		1.60			1.50		.295		1.305			1.50	
2623	Jan. 21, 1922		1.60			1.50		.295		1.305			1.50	
2624	do			1.50				.295			1.205			1.50
2625	Jan. 24, 1922		1.60			1.50		.295		1.305			1.50	
2626	do			1.50				.295			1.205			1.50
2627	Jan. 20, 1922		1.60			1.50		.295		1.305			1.50	
2628	Jan. 31, 1922			1.60				1.425			1.075			1.50
2629	do			1.60				1.425			1.075			1.50
2630	Feb. 3, 1922		1.60			1.50		.295		1.305			1.50	
2634	do			1.60				.295			1.305			1.50
2635	do		1.60			1.50		.295		1.305			1.50	
2641	Mar. 4, 1922		1.60				1.35	.295		1.305		1.35	1.35	1.40
2650	Mar. 18, 1922					1.50		.295		1.355			1.50	
2661	May 8, 1922		1.65			1.50		.295		1.355			1.50	
2662	May 13, 1922		1.65			1.50		.295		1.355			1.50	
2663	May 19, 1922		1.65			1.50		.295		1.355			1.50	
2664	do		1.65			1.50		.295		1.355			1.50	
2665	May 18, 1922		1.65			1.50		.295		1.355			1.50	
2696	May 15, 1922		1.65			1.50		.295		1.355			1.50	
2697	June 14, 1922			1.65				.295			1.355			1.70
2698	June 27, 1922		1.65			1.60		.295		1.355			1.70	
2673	July 5, 1922		1.65			1.60		.265		1.385			1.70	
2674	July 15, 1922		1.65			1.60		.265		1.385			1.70	
2675	July 10, 1922		1.65	1.55		1.60	1.60	.265		1.385	1.285		1.70	1.70
2676	July 24, 1922		1.60			1.60		.265		1.335			1.70	
2679	July 18, 1922		1.65			1.60		.265		1.385			1.70	
2682	July 22, 1922		1.60			1.60		.265		1.335			1.70	
2683	July 24, 1922		1.65			1.60		.265		1.385			1.70	
2685	do		1.60			1.60		.265		1.335			1.70	

1 Less than carload.

SHIPMENTS TO BUFFALO STRUCTURAL STEEL CO.

	2687	Aug. 8, 1922	1.80	1.60	1.70	1.80	1.35	1.535	1.335	1.80	1.80
2690	2691	do	1.80	1.55	1.70	1.80	1.35	1.535	1.335	1.80	1.80
2693	2694	Aug. 9, 1922	1.65	1.80	1.70	1.80	1.35	1.385	1.285	1.80	1.80
2694	2695	Aug. 10, 1922	1.80	1.80	1.70	1.80	1.35	1.385	1.285	1.80	1.80
2695		Sept. 9, 1922	1.80	1.80	1.70	1.80	1.35	1.385	1.285	1.80	2.00
											2.00
1177		Dec. 28, 1921	\$1.65		\$1.50			\$1.355		\$1.50	
1179		Dec. 22, 1921	1.65		1.50			1.355		1.50	
1182		Dec. 16, 1921	1.65		1.50			1.355		1.50	
1184		do	1.65		1.50			1.355		1.50	
1189		Oct. 27, 1921	1.80		1.75			1.505		1.60	
1190		Oct. 17, 1921	1.80		1.75			1.505		1.60	
1192		Oct. 21, 1921	1.80		1.75			1.505		1.60	
1194		Sept. 9, 1921	1.80		1.75			1.505		1.60	
1308		Jan. 21, 1922	1.65		1.50			1.455		1.70	
1306		Jan. 30, 1922	1.65		1.50			1.355		1.50	
1302		Feb. 23, 1922	1.60	\$1.50	1.40			1.305		1.40	\$1.40
1300		Mar. 4, 1922	1.60		1.40			1.305		1.40	
1297		Mar. 9, 1922	1.50		1.40			1.205		1.35	
1295		Mar. 13, 1922	1.50		1.40			1.205		1.35	
1293		Mar. 28, 1922	1.50		1.40			1.205		1.40	
1291		Apr. 6, 1922	1.50		1.60			1.205		1.50	
1288		May 23, 1922	1.65		1.50			1.355		1.60	
1286		do	1.50		1.50			1.205		1.60	
1285		June 12, 1922	1.65		1.60			1.355		1.70	
1282		July 17, 1922	1.50		1.60			1.235		1.70	
1282		do	1.60		1.60			1.335		1.70	
1278		July 25, 1922	\$1.85		\$1.60			\$1.585		\$1.70	
1273		Aug. 1, 1922	1.75		1.70			1.485		1.70	
1270		do									
1268		Aug. 9, 1922	1.75		1.70			1.485		1.70	
1266		Aug. 4, 1922	2.00		1.70			1.735		1.80	
1264		do	1.75		1.70			1.485		1.70	
1260		Aug. 17, 1922	1.75		1.70			1.485		1.90	
1260		do								1.90	
1260		do	1.85		1.70			1.635		1.90	
1257		Aug. 15, 1922	2.00		1.70			1.735		1.90	
1257		do								1.90	
1257		do	1.85		1.70			1.485		1.90	
1257		do	1.90		1.70			1.585		1.90	
1251		Aug. 23, 1922	2.00		1.70			1.735		2.00	
1448		do	1.85		1.70			1.485		2.00	
1228		do	1.75		1.70			1.585		2.00	
1248		do	1.90		1.70			1.635		2.00	
1248		do	2.00		1.70			1.735		2.00	
1243		do	1.85		1.70			1.585		2.00	

SHIPMENTS TO BUFFALO STRUCTURAL STEEL CO.—Continued

Exhibit No.	Date of invoice	Price f. o. b. Lackawanna, N. Y.			Price of Carnegie Steel Co., base Pittsburgh			Freight rate from Pittsburgh to Buffalo	Pittsburgh equivalent			Then-current Pittsburgh price as quoted in The Iron Age		
		Plates	Shapes	Bars	Plates	Shapes	Bars		Plates	Shapes	Bars	Plates	Shapes	Bars
1226	Aug. 31, 1922		\$1.75			\$1.95		\$0.265		\$1.485			\$2.00	
1226	do		1.85			1.95		.265		1.585			2.00	
1226	do		1.90			1.95		.265		1.635			2.00	
1226	do		2.00			1.95		.265		1.735			2.00	
1224	Sept. 2, 1922		1.75			1.95		.265		1.495			2.00	
1224	do		1.85			1.95		.265		1.585			2.00	
1224	do		1.90			1.95		.265		1.635			2.00	
1224	do		2.00			1.95		.265		1.735			2.00	
1224	do		1.75			1.95		.265		1.485			2.00	
1217	Sept. 3, 1922		1.00			1.95		.265		1.635			2.00	
1204	Sept. 8, 1922		1.75			1.95		.265		1.485			2.00	
1204	do		2.00			1.95		.265		1.735			2.00	
1205	Sept. 7, 1922		1.75			1.95		.265		1.485			2.00	
1205	do		1.90			1.95		.265		1.635			2.00	
1205	do		2.00			1.95		.265		1.735			2.00	
1211	Sept. 9, 1922		1.75	\$1.90		1.95		.265		1.485	\$1.635		2.00	\$2.00
1211	do		2.00			1.95		.265		1.635			2.00	
1211	do		1.90			1.95		.265		1.735			2.00	
1213	Sept. 5, 1922		1.75			1.95		.265		1.485			2.00	
1213	do		2.00			1.95		.265		1.735			2.00	
1215	do		{ 1.75 2.00			1.95		.265		1.485			2.00	

SHIPMENTS TO AUGUST FEINE & SONS CO., INC., BUFFALO, N. Y.

Exhibit No.	Date of invoice	Price f. o. b. Lackawanna, N. Y.			Price of Carnegie Steel Co., base Pittsburgh			Freight rate from Pittsburgh to Buffalo	Pittsburgh equivalent			Then-current Pittsburgh price as quoted in The Iron Age		
		Plates	Shapes	Bars	Plates	Shapes	Bars		Plates	Shapes	Bars	Plates	Shapes	Bars
3445	Dec. 15, 1921		\$1.65			\$1.50		\$0.295		\$1.355			\$1.50	
3448	Jan. 3, 1922		1.65			1.50		.295		1.355			1.50	
3451	Jan. 31, 1922		1.65	\$1.65		1.50	\$1.50	.295		1.355	\$1.355		1.50	\$1.50
3454	Feb. 22, 1922		1.65			1.40		.295		1.355			1.40	
3456	Mar. 1, 1922		1.65			1.40		.295		1.355			1.35	
3458	Mar. 13, 1922		1.65			1.40		.295		1.355			1.35	
3461	May 20, 1922		1.65			1.50		.295		1.355			1.60	
3463	June 10, 1922		1.65	1.65		1.50	1.50	.295		1.355			1.60	
3463	do							.295			1.355			1.70
3463	July 1, 1922		1.65			1.60		.265		1.385			1.70	

EXHIBIT 44

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

MAXIMUM PRICES OF LACKAWANNA STEEL CO.

The following is a partial Abstract of invoices appearing in the record herein which were rendered by Bethlehem Steel Co., Cambria Steel Co., and Lackawanna Steel Co., against Kellogg Structural Steel Co., Buffalo, N. Y., during the year 1919 and by Bethlehem Steel Co., during a portion of the year 1920, showing—

- (1) the prices at which plates, standard structural shapes, and bars were sold "freight allowed to Buffalo, N. Y.";
- (2) the then current carload freight rate from Pittsburgh to Buffalo;
- (3) the Pittsburgh equivalent price;
- (4) the then current price of Carnegie Steel Co., base Pittsburgh.
- (5) the then current Pittsburgh price, as quoted in the Iron Age.

In view of the fact that the prices charged this consumer by Lackawanna Steel Co. were slightly higher during a portion of 1919 than the then current prices of Carnegie Steel Co., or those quoted in the Iron Age as prevailing at Pittsburgh, plus the then current carload freight rate from Pittsburgh to Buffalo, and that market conditions were such at the time that steel was not commanding a premium for prompt delivery, attention is called to the fact that Lackawanna's terms of sale which appear on face of invoice provided for "trade acceptance payable in 45 days from invoice date," whereas, those of Cambria Steel Co. and Bethlehem Steel Co. were the usual terms prevailing in the trade, i. e., "30 days net, one-half of 1 percent in 10 days."

Exhibit No.	Producer	Document date	Delivered price			Freight rate from Pittsburgh	Pittsburgh equivalent			Prices "base Pittsburgh" of Carnegie Steel Co.—subsidiary of United States Steel Corporation			Pittsburgh price quoted in the Iron Age		
			Plates	Shapes	Bars		Plates	Shapes	Bars	Plates	Shapes	Bars	Plates	Shapes	Bars
2345	Lackawanna Steel Co.	May 22, 1919	\$2.865	\$2.665	\$2.565	\$0.215	\$2.65	\$2.45	\$2.35	\$2.65	\$2.45	\$2.35	\$2.65	\$2.45	\$2.35
2348	do.	June 17, 1919		2.665		.215		2.50		2.35	2.45	2.35	2.65	2.45	2.35
2352	do.	June 30, 1919		2.715		.215		2.50		2.35	2.45	2.35	2.65	2.45	2.35
2353	do.	July 2, 1919		2.715		.215		2.50		2.35	2.45	2.35	2.65	2.45	2.35
2354	do.	July 12, 1919	1.2.89			.215	2.675			2.65			2.65	2.45	2.35
2355	do.	July 15, 1919		2.715		.215		2.50			2.45		2.65	2.45	2.35
2357	do.	July 23, 1919		2.715	2.615	.215		2.50	2.40		2.45		2.65	2.45	2.35
2358	Cambria Steel Co.	Aug. 1, 1919		2.665		.215		2.45			2.45		2.65	2.45	2.35
2700	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2701	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2702	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2359	Lackawanna Steel Co.	Aug. 11, 1919		2.69		.215		2.475			2.45		2.65	2.45	2.35
2363	do.	Aug. 14, 1919		2.735		.215		2.52			2.45		2.65	2.45	2.35
2364	do.	do.		2.735		.215		2.52			2.45		2.65	2.45	2.35
2370	do.	Aug. 23, 1919		2.715		.215		2.50			2.45		2.65	2.45	2.35
2376	do.	do.		2.735		.215		2.52			2.45		2.65	2.45	2.35
	do.	Sept. 9, 1919		2.71		.215		2.495			2.45		2.65	2.45	2.35
2377	do.	do.		10		.215		2.52			2.45		2.65	2.45	2.35
	do.	do.		2.735		.215		2.45			2.45		2.65	2.45	2.35
2736	Bethlehem Steel Co.	Sept. 10, 1919		2.665		.215		2.45			2.45		2.65	2.45	2.35
2738	do.	Sept. 22, 1919		2.665		.215		2.45			2.45		2.65	2.45	2.35
	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2384	Lackawanna Steel Co.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2742	Bethlehem Steel Co.	Sept. 27, 1919		2.735		.215		2.52			2.45		2.65	2.45	2.35
2743	do.	Sept. 29, 1919		2.665		.215		2.45			2.45		2.65	2.45	2.35
2337	Lackawanna Steel Co.	Oct. 6, 1919		2.665		.215		2.45			2.45		2.65	2.45	2.35
2703	Cambria Steel Co.	Oct. 27, 1919	2.865			.215	2.65			2.65			2.50		
2752	Bethlehem Steel Co.	Nov. 17, 1919		2.665		.215		2.45			2.45		2.65	2.45	2.35
2704	Cambria Steel Co.	Dec. 1, 1919		2.665		.215		2.45			2.45		2.65	2.45	2.35
2705	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2706	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2707	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2708	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2709	do.	do.		2.665		.215		2.45			2.45		2.65	2.45	2.35
2754	do.	Jan. 3, 1920		2.665		.215		2.45			2.45		2.65	2.45	2.35
2755	do.	Jan. 5, 1920		2.665		.215		2.45			2.45		2.65	2.45	2.35

Instances in which the "delivered price" at Buffalo is higher than the then current price at Pittsburgh as quoted by Carnegie Steel Co. or the Iron Age, plus the then current railroad freight rate from Pittsburgh to Buffalo.

Exhibit No.	Producer	Document date	Delivered price			Freight rate from Pittsburgh	Pittsburgh equivalent			Prices "base Pittsburgh" of Carnegie Steel Co.—subsidiary of United States Steel Corporation			Pittsburgh price quoted in the Iron Age		
			Plates		Bars		Plates	Shapes	Bars	Plates	Shapes	Bars	Plates	Shapes	Bars
2756	Cambria Steel Co.	Jan. 14, 1920		\$2.665		\$0.215		\$2.45			\$2.45			\$2.45	
2757	do.	Jan. 30, 1920		2.665		.215		2.45			2.45			2.55	
2758	do.	Mar. 11, 1920		2.665		.215		2.45			2.45			3.00	
2759	do.	Feb. 21, 1920		2.665		.215		2.45			2.45			2.70	
2760	do.	Apr. 2, 1920		2.665		.215		2.45			2.45			3.25	
2765	do.	Apr. 28, 1920		2.665		.215		2.45			2.45			3.25	
2764	do.	May 12, 1920		2.665		.215		2.45			2.45			3.10	
2765	do.	do.		2.665		.215		2.45			2.45			3.10	
2766	do.	do.		2.665		.215		2.45			2.45			3.10	
2767	do.	May 27, 1920		2.665		.215		2.45			2.45			3.10	
2770	do.	June 11, 1920		2.665		.215		2.45			2.45			3.10	
2774	do.	June 23, 1920		2.665		.215		2.45			2.45			3.10	

EXHIBIT 45

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

METHOD OF SALE BY BETHLEHEM STEEL CO.

The following is a partial abstract of quotations by Bethlehem Steel Co. on bar steel to a customer in Philadelphia, Pa., which are contained in the record herein, all of which quotations, except as otherwise indicated and stated in note ⁽⁸⁾ hereof, are in substantially the following terms, "We are pleased to offer our basic open hearth commercial quality soft steel bars in the black as rolled condition and cut to regular mill lengths at a price of — cents per lb. base, Pittsburgh basis.¹

"To the above price will be added the Pittsburgh rate of freight from Pittsburgh to Philadelphia, the rate of freight from mill to Philadelphia being allowed on invoices." (Commission's Exhibit, herein, No. 21378).¹

Exhibit No.	Date	Form of product	Delivered price	Freight from Pittsburgh	Pittsburgh equivalent	Iron Age price	Carnegie Steel Co.'s price
				<i>Cents</i>			
21299	Jan. 14, 1919	Bars			\$2. 70	\$2. 70	\$2. 70
21300	Jan. 28, 1919	do			2. 70	2. 70	2. 70
21326	July 29, 1919	do			2. 35	2. 35	2. 35
21327	July 30, 1919	do			2. 35	2. 35	2. 35
21328	do	do			2. 35	2. 35	2. 35
21330	Aug. 26, 1919	do			2. 35	2. 35	2. 35
21331	Aug. 27, 1919	do			2. 35	2. 35	2. 35
21332	do	do			2. 35	2. 35	2. 35
21333	Aug. 29, 1919	do			2. 35	2. 35	2. 35
21335	Oct. 1, 1919	do			2. 50	2. 35	2. 35
21336	Oct. 2, 1919	do			2. 50	2. 35	2. 35
21337	do	do			2. 50	2. 35	2. 35
21342	July 6, 1920	do			4. 25	3. 50	2. 35
21343	July 7, 1920	do			4. 25	3. 50	2. 35
21344	do	do			4. 25	3. 50	2. 35
21345	Sept. 7, 1920	do			4. 00	3. 25	2. 35
21347	do	do			4. 00	3. 25	2. 35
21348	do	do			4. 00	3. 25	2. 35
21353	Dec. 6, 1920	do			2. 75	2. 35	2. 35
21354	Dec. 31, 1920	do			2. 35	2. 35	2. 35
21355	Jan. 12, 1921	do			2. 35	2. 35	2. 35
21356	Mar. 4, 1921	do			2. 10	2. 00	2. 35
21357	Mar. 8, 1921	do			2. 35	2. 00	2. 35
21358	Apr. 1, 1921	do			2. 00	2. 00	2. 35
21360	Apr. 2, 1921	do			2. 00	2. 00	2. 35
21361	Apr. 26, 1921	do			2. 10	2. 10	2. 10
21362	Apr. 28, 1921	do			2. 10	2. 10	2. 10
21364	June 2, 1921	do			2. 10	2. 10	2. 10
21366	June 14, 1921	do			2. 10	2. 10	2. 10
21367	June 29, 1921	do			2. 10	2. 00	2. 10
21368	July 7, 1921	do			1. 90	1. 90	1. 90
21369	Aug. 3, 1921	do			1. 75	1. 75	1. 75
21370	Aug. 31, 1921	do			1. 75	1. 70	1. 75
21371	Nov. 29, 1921	do			1. 75	1. 50	1. 50
21372	Dec. 2, 1921	do			1. 60	1. 50	1. 50
21373	do	do			1. 60	1. 50	1. 50
21374	Jan. 3, 1922	do			1. 50	1. 50	1. 50
21375	Mar. 2, 1922	do			1. 40	1. 35	1. 40-1. 50
21376	Mar. 7, 1922	do			1. 40	1. 35	1. 35-1. 50
21378	Apr. 13, 1922	do			1. 50	1. 50	1. 50-1. 60

¹ So-called "Redfield Scale" announced by Industrial Board of Department of Commerce, March 21, 1919, Commission's exhibit, herein.

² Price is resolved into base quality by use of forging quality extra 25 cents per cwt. as per Commission's exhibit, herein, No. 21354.

³ "Premium price" for prompt or specified delivery as shown by Commission's exhibits, herein.

⁴ Price succeeding action of Midvale Steel & Ordnance Co. stated in annual report of that company year 1920, p. 5, Commission's exhibit, herein, which is as follows: "We thereon on February 4, 1921, announced radical reductions in the selling prices of our standard rolled products."

⁵ "Stabilized basis of April 12" as per Commission's exhibits, herein.

⁶ Price announced by Bethlehem Steel Co. on July 4 to become effective on July 5, as recorded in Philadelphia market letter in The Iron Age, issue of July 7, 1921, p. 41, Commission's exhibit, herein, No.—, pp. 126-129.

⁷ Variable prices "base Pittsburgh" during period in which Lackawanna Steel Co. and Midvale Steel & Ordnance Co. were quoting "f. o. b. seller's mill," Commission's exhibits, herein.

⁸ "The established meaning of Pittsburgh basis is that the price is f. o. b. Pittsburgh plus the official all-rail freight rate in effect from Pittsburgh to destination on date of shipment, less the official all-rail freight rate in effect from seller's works to destination on date of shipment." (Commission's exhibits, herein, Nos. 11443, 16443.)

METHOD OF SALE BY BETHLEHEM STEEL CO.—Continued

Exhibit No.	Date	Form of products	Delivered price	Freight from Pittsburgh	Pittsburgh equivalent	Iron Age price	Carnegie Steel Co.'s price
				Cents			
21381	June 14, 1922	Bars			\$1.70	\$1.70	\$1.60
21382	July 8, 1922	do			1.75	1.70	1.60-1.70
21383	Oct. 5, 1922	do			2.15	2.00	
21384	Oct. 11, 1922	do			2.10	2.00	
21386	Oct. 28, 1922	do			2.10	2.00	
21388	Oct. 30, 1922	do			2.00	2.00	
21389	Dec. 31, 1922	do			2.00	2.00	
21390	Feb. 7, 1923	do			2.15	2.10	
21391	May 29, 1923	do			2.50	2.40	
21392	June 13, 1923	do			2.50	2.40	
21393	July 2, 1923	do			2.40	2.40	
21394	July 30, 1923	do			2.40	2.40	
21395	do	do			2.40	2.40	
21396	Aug. 6, 1923	do			2.40	2.40	
21397	Sept. 1, 1923	do			2.40	2.40	
21398	Aug. 29, 1923	do			2.40	2.40	
21399	Sept. 29, 1923	do			2.40	2.40	
21400	Oct. 2, 1923	do			2.40	2.40	
21401	Oct. 3, 1923	do	Back to Pittsburgh plus prices		2.40	2.40	
21402	Oct. 27, 1923	do			2.40	2.40	
21403	Dec. 1, 1923	do			2.40	2.40	
21404	Dec. 8, 1923	do			2.40	2.40	
21405	Dec. 22, 1923	do			2.40	2.40	
21406	Jan. 25, 1924	do			2.40	2.40	
21407	Mar. 19, 1924	do			2.40	2.40	
21408	Apr. 4, 1924	do			2.40	2.30	
21409	Apr. 9, 1924	do			2.40	2.30	
21410	Apr. 28, 1924	do			2.30	2.30	
21411	May 10, 1924	do			2.30	2.25	
21412	June 6, 1924	do			2.25	2.20	
21413	July 30, 1924	do			2.15	2.15	
21414	Aug. 27, 1924 ⁸	do		\$ 2.47	32	2.15	2.10
21415	Sept. 19, 1924 ⁸	(10)		\$ 2.475	37½	2.10	2.00
21416	Dec. 3, 1924 ⁸	(10)		\$ 2.475	37½	2.10	2.10

⁸ Quotations made subsequent to the Commission's order in *Federal Trade Commission v. United States Steel Corporation, et al.*—Docket No. 760, which quotations read substantially as follows: "based on furnishing our commercial quality soft steel, black as rolled, we quote price of — cents per lb. base mill with carload (or less carload) freight allowed to Philadelphia.

⁹ "There is nothing to indicate that the abandonment of Pittsburgh basing for steel products by the United State Steel Corporation and some of the independents will have any marked effect upon prices or conditions of doing business in the Philadelphia district. So far the only change is that most of the mills are quoting delivered prices rather than f. o. b. prices, but the actual cost of material to the consumer figures out exactly the same. In fact, the Eastern mills, in making quotations, simply include the freight from Pittsburgh in their delivered prices." (Philadelphia market letter, *The Iron Age*, Oct. 2, 1924, p. 883; Commission's exhibit, herein, No. —, p. 63).

¹⁰ Less than carload quantity.

EXHIBIT 46

BETHLEHEM STEEL CO.,
Philadelphia, Pa., August 27, 1924.
2250-15

Subject: Steel bars.

THE PHILADELPHIA & READING COAL & IRON CO.,
Mr. E. L. KEANE, *Purchasing Agent*,
Philadelphia, Pa.

DEAR SIR: Acknowledging your inquiry PS-583 of August 22d covering a quantity of steel bars to specifications given, based on furnishing our commercial quality soft steel, black as rolled, we quote price of 2.47 cents per pound base mill, with carload freight allowed to Philadelphia.

Shipment of the 2½-inch, 3-inch, 5-inch, and 5¼-inch rounds would be subject to mill conditions, but on the balance of the sizes specified we could offer shipment in about 30 days after entry of order by our mill.

The above proposition is made for acceptance within 7 days from date, and we hope to be favored.

Very truly yours,

BETHLEHEM STEEL CO.,
[s] W. B. KENNEDY, *Sales Agent*.

EXHIBIT 47

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

METHOD OF SALE BY BETHLEHEM STEEL CO.

The following is a partial list of acknowledgments of orders by Bethlehem Steel Co. addressed to customers in Baltimore, Md., which are contained in the record herein, some of which are dated immediately subsequent to the acquisition by Bethlehem of the properties of Lackawanna Steel Co. and/or Midvale Steel & Ordnance Co., which acknowledgments are in substantially the following form, showing that the sales referred to therein were made upon the "Pittsburgh basis";¹ "We acknowledge with thanks receipt of your order number ----- dated ----- for approx. ----- No. commercial quality steel bars which has been entered for prompt attention on account of your contract -----, at the following prices: ----- cents per pound base, Pittsburgh basis, for soft steel and tire steel, plus ----- cents for tire steel under $1\frac{1}{2} \times \frac{1}{2}$, ----- cents per pound, base, Pittsburgh basis, plus ----- cents for quality, for spring steel plus ----- cents for jobbers differential, f. o. b. cars our works, Johnstown, Pa., and Lackawanna, N. Y." (Commission's exhibit No. 21913.)

Exhibit No.	Date	Exhibit No.	Date	Exhibit No.	Date	Exhibit No.	Date
21768.....	Oct. 23, 1922	21789.....	July 5, 1923	21926.....	Dec. 13, 1923	21931.....	May 7, 1924
21769.....	Nov. 4, 1922	21912.....	July 6, 1923	21929.....	Jan. 15, 1924	21815.....	May 8, 1924
21919.....	Dec. 13, 1922	21913 ¹	July 20, 1923	22288.....	Feb. 9, 1924	21932.....	May 15, 1924
21910.....	Dec. 18, 1922	22279.....	July 24, 1923	21800.....	Feb. 15, 1924	21817.....	May 21, 1924
21911.....	Dec. 20, 1922	21791.....	Aug. 13, 1923	22289.....	Feb. 25, 1924	22296.....	May 27, 1924
21771.....	Jan. 5, 1923	21918 ²	Aug. 13, 1923	21802.....	Mar. 7, 1924	22297.....	June 3, 1924
21772.....	Jan. 13, 1923	21793.....	Aug. 21, 1923	21803.....	Mar. 14, 1924	22298.....	June 6, 1924
21773.....	Jan. 17, 1923	21794.....	Sept. 6, 1923	21804.....	Mar. 22, 1924	22299.....	June 13, 1924
21774.....	Jan. 30, 1923	21921.....	Sept. 18, 1923	22083.....	Mar. 25, 1924	22300.....	June 14, 1924
22262.....	Feb. 19, 1923	21795.....	Oct. 1, 1923	21805.....	Mar. 31, 1924	21933.....	July 8, 1924
22263.....	Mar. 8, 1923	21796.....	Oct. 9, 1923	21808.....	Apr. 3, 1924	21822.....	July 10, 1924
21782.....	May 24, 1923	21924.....	Oct. 23, 1923	21930.....	Apr. 4, 1924		
21787.....	June 15, 1923	22284.....	Oct. 27, 1923	21810.....	Apr. 10, 1924		
21788.....	June 16, 1923	21797.....	Nov. 1, 1923	22293.....	Apr. 28, 1924		

¹ 96,000 pounds commercial quality steel bars, 2.40 cents per pound base Pittsburgh basis, * * * f. o. b. our works Johnstown, Pa., and Lackawanna, N. Y.

² 170,000 pounds soft and tire steel, price \$2.40 base Pittsburgh basis, * * * f. o. b. cars, our works Johnstown, Pa., and Lackawanna, N. Y.

EXHIBIT No. 48

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET No. 962

The following is a tabulation of invoices contained in the record herein showing shipments of plates, standard structural shapes and bars from Cambria Steel Co., Johnstown, Pa.; also plates (tank and structural quality) from Midvale Steel & Co., Ordnance, Coatesville, Pa., to Bethlehem Fabricators, Inc., Bethlehem, Pa., during the years 1921 and 1922.

¹ The established meaning of Pittsburgh basis is that the price is f. o. b. Pittsburgh plus the official all-rail freight rate in effect from Pittsburgh to destination on date of shipment, less the official all-rail freight rate in effect from seller's works to destination on date of shipment. (Commission's exhibit Nos. 11443 and 16443.)

CONCENTRATION OF ECONOMIC POWER

FROM JOHNSTOWN, PA.

Exhibit No.	Invoice date	Form			Exhibit No.	Invoice date	Form		
		Plates	Shapes	Bars			Plates	Shapes	Bars
1	Feb. 21, 1921		16,094		45	Sept. 9, 1921	2,380		
2	do		73,630		46	Sept. 26, 1921		5,706	
3	Feb. 24, 1921		56,903		47	Nov. 9, 1921		4,976	
5	do		127,449		48	do		25,957	
7	Feb. 25, 1921			306	49	Feb. 4, 1922		2,030	
8	do		110,021		50	May 11, 1922		138,000	
9	do	34,020			51	June 17, 1922		44,124	
10	Mar. 4, 1921	70,760			52	do		48,390	
12	Mar. 12, 1921		67,603		53	June 20, 1922	39,710		
13	do		70,422		55	do	38,380		
14	Mar. 14, 1921	28,370	18,460		57	do		8,607	
16	do		22,140		58	June 22, 1922	7,100		
17	do		27,748		59	do	59,320		
19	do		87,199		61	July 10, 1922	40,760		
20	do	63,740			62½	do		42,409	
22	Mar. 16, 1921	40,280			64	do	11,490		
24	Mar. 24, 1921		32,205		65	do	30,530		
25	do	16,990			66	July 21, 1922	68,840		
26	Mar. 30, 1921		33,297		68	July 27, 1922		46,236	
27	do	3,070			69	do	43,760		
28	do	670	7,380		71	do		61,065	
29	do		73,620		72	July 31, 1922		43,289	
31	Apr. 1, 1921		69,527		73	do		1,959	
32	Apr. 7, 1921	56,020			74	Aug. 24, 1922		57,358	
33	Apr. 11, 1921	35,985	8,700		75	do	36,750		
34	do		10,965		76	do		76,897	
35	July 16, 1921		10,368		77	do		48,565	
36	do		6,517		78	Oct. 21, 1922		62,640	
37	do		66,848		79	Dec. 23, 1922		100,139	
39	Aug. 3, 1921	44,000			80	do		64,581	
40	do	43,610							
43	Sept. 3, 1921		10,060			Total	816,535	1,890,084	

FROM COATESVILLE, PA.

81	Apr. 19, 1921	1,745			88	Oct. 17, 1921	29,240		
82	Aug. 19, 1921	98,545			89	do	73,235		
83	Aug. 22, 1921	79,345			90	Oct. 19, 1921	1,745		
84	Sept. 5, 1921	35,735				Total	426,145		
86	Oct. 15, 1921	3,660							
87	do	102,895							

The following is a complete Abstract of invoices showing tonnage consisting of 24-inch beams:

Exhibit		Invoice date	Size	Weight
No.	Page			
19	Mar. 14, 1921	24 inches by 79.9 feet		21,553
26	Mar. 30, 1921	24 inches by 100 feet		5,151
36	July 16, 1921	24 inches by 79.9 feet		3,656
43	Sept. 3, 1921	24 inches by 79.9 feet		10,066
46	Sept. 26, 1921	24 inches by 79.9 feet		5,706
47	Nov. 9, 1921	24 inches by 79.9 feet		2,757
47	do	24 inches by 100 feet		2,219
48	do	24 inches by 110 feet		25,957
63	July 27, 1922	24 inches by 100 feet		27,056
63	do	24 inches by 79.9 feet		10,656
68	do	24 inches by 85 feet		2,412
72	July 31, 1922	24 inches by 79.9 feet		20,425
72	do	24 inches by 90 feet		3,368
72	do	24 inches by 79.9 feet		7,834
73	do	24 inches by 79.9 feet		1,959
80	Dec. 23, 1922	24 inches by 105.9 feet		8,612
Total				159,387

24-inch beams are of total standard structural shapes: 7.4 percent.

EXHIBIT 49

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET NO. 962

The following tabulation shows—

(a) A comparison of the various charges as additions to base prices or what are commonly known as "extras," for various sizes of steel bars and small structural shapes (other than base sizes); which became effective on July 1, 1923, with those in effect prior to the acquisition by Bethlehem Steel Co. of the properties of Lackawanna Steel Co., Cambria Steel Co., and Midvale Steel & Ordnance Co.

(b) A comparison of the charges for machine cutting to specified lengths;

(c) A comparison of the "extras" for other than machine cutting to specified lengths;

(d) A comparison of "quantity differentials," i. e., for all specifications for less than 2,000 pounds of a size; and

(e) A statement of additional charges not theretofore made as charges for "differentials for quantity cutting" wherein it is stated that "whether or not quantity differentials or cutting extras apply there will be an extra charge for cutting less than 2,000 pounds of any size to a specified length, regardless of the total tonnage of the size ordered, regardless of what the length may be and regardless of exact quantity shipped."

The following is derived from Commission's exhibits.

Forms and sizes	Extra if any		Percent of increase
	Effective July 1, 1923	Prior	
ROUNDS AND SQUARES			
$\frac{3}{4}$ to $3\frac{1}{16}$ inches	Base	Base	
$\frac{5}{8}$ to $1\frac{1}{16}$ inch	\$0.10	\$0.05	100
$\frac{9}{16}$ inch	.15	.10	50
$\frac{1}{2}$ inch	.20	.10	100
$\frac{7}{16}$ inch	.30	.20	50
$\frac{3}{8}$ inch	.40	.25	60
$1\frac{1}{32}$ inch	.55	.30	80
$\frac{5}{16}$ inch	.70	.35	100
$\frac{9}{32}$ inch	.85	.40	112
$\frac{1}{4}$ inch	1.00	.50	100
$1\frac{1}{4}$ inch	1.25	.75	67
$\frac{7}{32}$ inch	1.50	1.00	50
$\frac{3}{16}$ inch	2.00	1.25	60
$3\frac{3}{8}$ to $3\frac{9}{16}$ inches	.10	.07 $\frac{1}{2}$	33
$3\frac{3}{8}$ to $4\frac{1}{16}$ inches	.15	.12 $\frac{1}{2}$	20
$4\frac{1}{8}$ to $4\frac{9}{16}$ inches	.25	.15	67
$4\frac{1}{8}$ to $5\frac{1}{16}$ inches	.35	.20	75
$5\frac{1}{8}$ to $5\frac{9}{16}$ inches	.45	.25	80
$5\frac{1}{8}$ to $6\frac{1}{16}$ inches	.55	.37 $\frac{1}{2}$	47
$6\frac{1}{8}$ to $6\frac{9}{16}$ inches	.65	.50	30
$6\frac{1}{8}$ to $7\frac{1}{4}$ inches	.75	.62 $\frac{1}{2}$	20
ANGLES			
$1\frac{1}{2}$ by $1\frac{1}{2}$ inches and wider but under 3 by $\frac{3}{16}$ inches and over	.15	.10	50
$\frac{1}{2}$ by $\frac{1}{2}$ inch and wider but under 3 by $\frac{1}{8}$ inches	.25	.15	67
1 by 1 inch to $1\frac{1}{4}$ by $1\frac{1}{4}$ by $\frac{3}{16}$ inches and over	.25	.15	67
1 by 1 inch to $1\frac{1}{4}$ by $1\frac{1}{4}$ by $\frac{1}{8}$ inches	.30	.20	50
$\frac{7}{8}$ by $\frac{7}{8}$ by $\frac{3}{16}$ inch	.35	.20	75
$\frac{7}{8}$ by $\frac{7}{8}$ by $\frac{1}{8}$ inch	.40	.25	60
$\frac{3}{4}$ by $\frac{3}{4}$ by $\frac{3}{16}$ inch	.45	.25	80
$\frac{3}{4}$ by $\frac{3}{4}$ by $\frac{1}{8}$ inch	.60	.30	100
$\frac{5}{8}$ by $\frac{5}{8}$ by $\frac{1}{8}$ inch	1.50	1.10	36
$\frac{5}{8}$ by $\frac{5}{8}$ by $\frac{3}{32}$ inch	2.00	1.30	54
$\frac{1}{2}$ by $\frac{1}{2}$ by $\frac{1}{8}$ inch	2.20	1.60	38
$\frac{1}{2}$ by $\frac{1}{2}$ by less than $\frac{1}{8}$ inch	2.50	1.80	39
3 by 3 by $\frac{1}{8}$ inches	.60	.35	43
CHANNELS			
$1\frac{1}{2}$ inches and wider but under 3 by $\frac{3}{16}$ inches and over	.25	.15	67
$1\frac{1}{2}$ inches and wider but under 3 by $\frac{1}{8}$ inches	.40	.25	60
1 to $1\frac{1}{4}$ by $\frac{3}{16}$ inches and over	.40	.25	60
1 to $1\frac{1}{4}$ by $\frac{1}{8}$ inches	.50	.35	43
1 to $1\frac{1}{4}$ by $\frac{7}{64}$ inches	.70	.50	40
$\frac{3}{4}$ and $\frac{7}{8}$ by $\frac{3}{16}$ inch and over	.50	.30	67
$\frac{3}{4}$ and $\frac{7}{8}$ by $\frac{1}{8}$ inch	.60	.40	50
$\frac{3}{4}$ and $\frac{7}{8}$ by $\frac{7}{64}$ inch	.80	.55	45
$\frac{5}{8}$ by $\frac{1}{8}$ inch and over	1.70	1.20	42
$\frac{5}{8}$ by $\frac{3}{32}$ inch	2.00	1.40	44
$\frac{1}{2}$ by $\frac{7}{64}$ inch and over	2.50	1.80	39
$\frac{1}{2}$ by $\frac{5}{64}$ inch	3.00	2.00	50

Forms and sizes	Extra if any		Percent of increase
	Effective July 1, 1923	Prior	
TEES			
1½ by 1½ inches and wider but under 3 by ¾ inches and over	\$0.30	\$0.20	50
1 by 1 to 1¼ by 1¼ by ¾ inches and over .....	.55	.40	38
1 by 1 to 1¼ by 1¼ by ½ inches .....	.70	.50	40
¾ by ¾ by ¾ inch .....	.70	.50	40
¾ by ¾ by ¾ inch .....	.90	.60	50
¾ by ¾ by ¾ inch .....	.90	.60	50
¾ by ¾ by ¾ inch	1.10	.70	57
¾ by ¾ by ¾ inch	1.80	1.30	38
½ by ½ by ½ inch	2.50	1.80	39
HALF ROUNDS			
1 to 3 inches .....	.30	.20	50
¾ to 1½ inch .....	.50	.35	43
¾ to 1½ inch .....	.70	.50	50
½ to ¾ inch	1.00	.70	43
¾ to ¾ inch	1.50	1.10	37
HALF OVALS			
¾ to 4 by ¾ inches and over .....	.40	.25	60
1 to 4 inches in numbers 7, 8, and 9 and ¾ inch .....	.50	.35	43
1 to 4 inches in numbers 10, 11, and 12 and ¾ inch .....	.70	.50	40
¾ to 1½ by ¾ inch and over .....	.70	.50	40
¾ to 1½ inch in numbers 10, 11, and 12 and ¾ inch .....	.90	.65	38
¾ to 1½ inch in numbers 13, 14, and 15	1.20	.80	50
¾ to 1½ by ¾ inch and over .....	.90	.60	50
¾ to 1½ inch in numbers 10, 11, 12, and ¾ inch	1.20	.75	60
¾ to 1½ inch in numbers 13, 14, and 15	1.40	.90	56
½ to ¾ by ¾ inch and over	1.20	.80	50
½ to ¾ inch in numbers 13, 14, and 15	1.60	1.05	50
¾ to ¾ by ¾ inch and over	2.00	1.35	48
¾ to ¾ inch in numbers 14 and 15	2.40	1.60	50
OVALS			
¾ to 2½ by ¾ inches and over .....	.30	.20	50
¾ to 2½ by ¾ to ¾ inches .....	.40	.30	33
¾ to 2½ by ¾ to ¾ inches .....	.70	.45	56
¾ to 1½ by ¾ inch and over .....	.50	.35	43
¾ to 1½ by ¾ to ¾ inch .....	.70	.50	40
¾ to 1½ by ¾ to ¾ inch	1.00	.65	52
½ to ¾ by ¾ inch and over	1.00	.55	82
½ to ¾ by ¾ to ¾ inch	1.30	.70	86
½ to ¾ by ¾ inch	1.60	.95	68
¾ to ¾ by ¾ inch and over	1.60	.95	68
¾ to ¾ by ¾ to ¾ inch	2.00	1.20	67
¾ to ¾ by ¾ inch	2.40	1.45	66
¾ to 3½ inches .....	.25	.15	67
¾ to 1½ inch .....	.40	.25	60
HEXAGONS AND OCTAGONS			
½ to ¾ inch .....	.60	.35	71
¾ inch .....	.80	.55	45
¾ inch	1.00	.65	54
¾ inch	1.20	.75	60
¾ inch .....	.50	1.00	50
Machine cutting to specified lengths:			
Lengths over 48 inches .....	.20	.15	33
Over 24 to 48 inches, inclusive .....	.30	.25	20
Over 12 to 24 inches, inclusive .....	.40	.35	14
12 inches and less quoted on application but not less than .....	.70	.45	56
Cutting to specified lengths other than machine:			
Cutting to lengths 120 inches and over	0	0	-----
Cutting to lengths over 60 to 120 inches .....	.05	0	-----
60 inches .....	.10	0	-----
59 inches .....	.10	.05	100
24 to 48 inches .....	.15	.10	50
12 to 24 inches .....	.30	.20	50
12 inches and less quoted on application but not less than .....	.40	.30	33
Differentials for quantity cutting:			
Less than 2,000 to 1,500 inches .....	.10	0	-----
Less than 1,500 to 1,000 inches .....	.20	0	-----
Less than 1,000 to 500 inches .....	.40	0	-----
Less than 500 inches .....	.60	0	-----
Quantity differentials: "All specifications for less than 2,000 pounds of a size will be subject to the following extras, the total weight of a size ordered to determine the extra, regardless of lengths and regardless of exact quantity actually shipped."			
Less than 2,000 pounds but not less than 1,000 pounds .....	.20	.15	33
Less than 1,000 pounds .....	.50	.35	43

FLATS

	Effective July 1, 1923		Prior	Percent of increase
1 to 6 by $\frac{3}{8}$ to 1 inch.....	Base	1 to 6 by $\frac{3}{8}$ to 1 inches.....	Base	-----
1 to 6 by $\frac{1}{4}$ to $\frac{5}{16}$ inches.....	\$0.15	1 to 6 by $\frac{1}{4}$ to $\frac{5}{16}$ inches.....	\$0.10	50
$\frac{1}{4}$ by $\frac{3}{8}$ to $\frac{3}{4}$ inch.....	.40	$\frac{1}{4}$ to $\frac{1}{2}$ by $\frac{3}{8}$ to $\frac{3}{4}$ inch.....	.20	100
$\frac{1}{4}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	.60	$\frac{1}{4}$ to $\frac{1}{2}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	.25	140
$\frac{3}{4}$ to $\frac{1}{2}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	.40			60
$\frac{3}{8}$ to $\frac{1}{2}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	.30			20
$\frac{5}{16}$ by $\frac{3}{8}$ to $\frac{1}{2}$ inch.....	.60	$\frac{5}{16}$ to $\frac{3}{8}$ by $\frac{3}{8}$ to $\frac{1}{2}$ inch.....	.25	100
$\frac{5}{8}$ by $\frac{3}{8}$ to $\frac{1}{2}$ inch.....	.40			60
$\frac{5}{16}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	.75	$\frac{5}{16}$ to $\frac{3}{8}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	.35	114
$\frac{1}{2}$ by $\frac{3}{8}$ to $\frac{3}{4}$ inch.....	.70	$\frac{1}{2}$ by $\frac{3}{8}$ to $\frac{3}{4}$ inch.....	.50	40
$\frac{1}{2}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	.60	$\frac{1}{2}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	.60	50
$\frac{3}{4}$ by $\frac{3}{8}$ inch.....	1.00	$\frac{3}{4}$ by $\frac{3}{8}$ inch.....	.70	43
$\frac{3}{4}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	1.20	$\frac{3}{4}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	.80	50
$\frac{3}{8}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	1.40	$\frac{3}{8}$ by $\frac{1}{4}$ to $\frac{5}{16}$ inch.....	1.00	40
$1\frac{1}{8}$ to 6 by $1\frac{1}{8}$ to $1\frac{1}{2}$ inches.....	.10	$1\frac{1}{8}$ to 6 by $1\frac{1}{8}$ to $1\frac{1}{2}$ inches.....	.05	100
$1\frac{1}{8}$ to 6 by $1\frac{1}{4}$ to $1\frac{1}{2}$ inches.....	.10	$1\frac{1}{8}$ to 6 by $1\frac{1}{4}$ to $1\frac{1}{2}$ inches.....	.10	0
$1\frac{1}{8}$ to 6 by $1\frac{3}{8}$ to 2 inches.....	.10	$1\frac{1}{4}$ to 6 by $1\frac{3}{8}$ to 2 inches.....	.15	-33
$1\frac{1}{8}$ to 6 by $2\frac{1}{8}$ to $2\frac{3}{4}$ inches.....	.20			25
$3\frac{1}{2}$ to 6 by 3 to 4 inches.....	.30	$3\frac{1}{8}$ to 6 by 3 to 4 inches.....	.20	50

EXHIBIT 50

ABANDONMENT OF PITTSBURGH BASING OF LITTLE EFFECT IN EASTERN PENNSYLVANIA DISTRICT

PHILADELPHIA, September 30.—There is nothing to indicate that the abandonment of Pittsburgh basing for steel products by the United States Steel Corporation and some of the independents will have any marked effect upon prices or conditions of doing business in the Philadelphia district. So far the only change is that most of the mills are quoting delivered prices rather than f. o. b. prices, but the actual cost of material to the consumer figures out exactly the same. In fact, the eastern mills, in making quotations, simply include the freight from Pittsburgh in their delivered prices.

Orders for steel in the past week have shown a slight gain over the preceding week notwithstanding the expectation that the change in methods of quoting would have an upsetting effect. The fact is that eastern consumers have generally understood that the new deal would not alter their situation and have accepted the delivered method of quoting with very little comment. The gain in orders in the past week does not mean that business is good; there continues to be a considerable degree of disappointment among steel companies that recovery has not been more rapid. In some lines, notably in structural shapes, conditions are not so promising as they were a month ago.

Source: "The Iron Age," October 2, 1924.

EXHIBIT 51

ORIGIN AND PURPOSE OF THE PITTSBURGH PLUS METHOD

(The following are excerpts from the testimony of Col. Henry P. Bope, formerly vice president of Carnegie Steel Co., in the *Pittsburgh Plus* case, F. T. C. Docket 760:)

Q. Going back to the original organization, what connection did the Pittsburgh-base system have with that?

A. The price was made, based upon Pittsburgh, because the Carnegie Bros. & Co. were the largest manufacturers, and it was felt they should have the say as to what the price should be, and how it should be established at the main point, so as to give stability of prices, which had been fluctuating all over the lot.

Q. By that do you mean to get uniform prices?

A. To get uniform prices.

Q. Before that time what was the practice?

A. The practice was generally to quote f. o. b. mills. Every mill was a law unto itself.

Q. And the difference in prices between the mills, did that amount to the freight rate, or was it entirely independent?

A. Each mill made whatever price seemed necessary to take the business. * * *

A. I sat in what was known as the Bar Association from 1897 on. That was what was called a gentlemen's agreement. It was not a pool. It was nothing more or less than an association to help stabilize prices, but more particularly to stabilize extras, which had been very unscientific in their manner, and we went to a cost basis in order to establish scientific extras, which were almost more important than the base price, and many of the associations dealt with matters of that kind quite as much or more than they dealt with prices; but the structural association existed in one form or another from 1880, excepting in 1893, when the panic produced such a chaotic condition of affairs that practically all the associations were dissolved; but they came together again after things began to get a little bit more stabilized.

Q. What was the necessity for a basing point? Could they maintain prices without a basing point?

A. No. They tried it once in 1909 and got into such chaos in a short time that the mills were glad to get back to the old base.⁵⁰

(The following are excerpts from the testimony of Edward Worcester, formerly vice president of National Tube Co., subsidiary of United States Steel Corporation, in the *Pittsburgh Plus* case:)

A. There were several plans proposed, and I proposed that in order to have a price perfectly definite to everybody anywhere, that we should sell delivered freight prepaid, so that there could be no interference with our freedom of action as to shipments, and no doubt in the mind of the customer what he was going to pay for his pipe, and, in order to do that we had to select a basing point to work from. So we established what was known as the Pittsburgh basing discount. That was under discussion from September 1899 until February 1900, and was finally agreed to among ourselves and put out on March 1, I think, 1900; but theretofore the list price of pipe—pipe is all sold on the basis of list and discounts—the list price of pipe took care of the various costs of the various sizes, so that pipe could be sold at one discount practically. That would have been a very cumbersome thing for us to handle. There was nothing to base your freight on. So we changed that and made our list 10 cents a pound.

Q. Made your list 10 cents a pound?

A. Made our list 10 cents a pound, so that if 3-inch pipe weighed 10 pounds the list was \$1. If 4-inch pipe weighed 10 pounds, it was \$1. If it weighed 12 pounds, it was \$1.20. So that every 10 cents a hundred freight, which would be \$2 a ton, would be 1 percent of discount. As your list was \$200 a ton, 1 percent of discount would be \$2 a ton; so that when we published a Pittsburgh-basing discount, we published it with these lists, and with a tariff book giving the rate of freight from Pittsburgh to every point in the United States, which was all distributed freely, and anyone anywhere wishing to know what pipe would cost him where he was had simply to take the Pittsburgh-basing discount and the freight rate. * * *⁵¹

(The following is an excerpt from a statement made by Judge Elbert H. Gary, then chairman of the United States Steel Corporation, at a conference held between the Federal Trade Commission and representatives of the Western Association of Rolled Steel Consumers:)

It was deemed necessary for the orderly conduct of the business to have one basing price and that was not alone for the benefit of the producer but for the benefit of the purchaser, who in turn fabricated the steel which he bought into something else, finished some form of steel with it, and therefore desired stability of price, something that was well understood, so that every user of steel all over the country bought and used his steel on a certain basis, knowing in advance that everyone else who bought steel had to pay exactly as he did, with the addition of the increased freight depending upon where he wanted to use the steel.⁵²

(Excerpts from the testimony of Walter S. Tower, executive secretary, American Iron & Steel Institute, in hearings before the Committee on Interstate Commerce, U. S. Senate, March 18, 1936, speaking personally and as secretary of the institute.)

I want the record to be perfectly clear and explicit, however, in regard to these very important matters to the members of the steel industry (p. 255).

The basing-point method of quoting prices existed for many, many years before the code was ever heard of. * * * It was not modified under the code in any detail whatever, and it was still used in the steel industry quite unchanged from what it was before the code incident came into the history of the industry (p. 253).

⁵⁰ Verbatim record of proceedings before Temporary National Economic Committee, January 29, 1940, p. 374.

⁵¹ Ibid. p. 375.

⁵² Transcript of record in the *Pittsburgh Plus* Case (docket 760), pp. 11736-11737.

Under the basing-point method the seller quotes a "delivered" price to the buyer. The "delivered" price is composed of the price at the basing point—which may or may not be the location of the seller's plant—plus freight charges from the basing point to the point of delivery. The cost of transportation influences prices in two ways. For sales in his own locality a producer has an advantage over any competitor located elsewhere. For sales at a distance a producer is at a disadvantage from the standpoint of freight and he must figure it into his cost of doing business if he wants to meet competition. For these reasons any producer who does other than a local business will find that his net return on sales varies with the place where the sale is made. * * * As a result of that practice a producer, no matter where located, may sell his products in any part of the country in competition with all other producers (p. 273).

(Excerpts from testimony of Walter S. Tower, executive secretary, American Iron & Steel Institute, before the National Recovery Review Board, April 19, 1934:)

Q. Given a piece of business, what do you mean by fair competition among members of the industry with reference to that business?

A. That a producer located anywhere may, if he desires, compete for that business, have an opportunity under the provisions of the code so to compete.

Q. A fair chance to get the business?

A. A fair chance to get the business (p. 70).

* * * * *

Q. * * * Do you mean that all members of the code have an equal opportunity to go out and get that business if they wish to get it?

A. As I understand the situation, and in accordance with my own thought which I have previously tried to express, any member of the code may, under the provisions of the code, compete for business anywhere without disadvantage to him (p. 71).

* * * * *

Q. So that, as I understand you, one of the purposes of the gentlemen who were preparing the code was to prepare a code that would enable the members of the code to compete on a substantially equal footing for any piece of business anywhere in the country?

A. That was the thought I was trying to put into words. * * * (p. 72).

EXHIBIT 52

(Letter from A. A. Dorenbusch, general sales manager, Newport Rolling Mill Co., Newport, Ky., to A. K. Andrews, president, Newport Rolling Mill Co.)¹

AUGUST 17, 1935.

Mr. A. K. ANDREWS,
Footes Bay, Ontario, Canada.

DEAR MR. A. K.: It was not definitely decided until late last evening to put into effect for fourth quarter a one-price policy allowing the galvanized sheet price to remain at \$3.10 per 100 pounds for No. 24 gage base f. o. b. Pittsburgh. A few of the larger interests such as Weirton and Inland were in favor of reducing the price to \$3 base for No. 24 gage f. o. b. Pittsburgh but this was finally defeated and it was agreed to allow all prices to remain the same as now in effect.

The announcement of no further jobber allowance after October 1 will be made by Continental on Tuesday of next week after which all mills can announce likewise. We, of course, in the meantime will notify our people which no doubt will be conducive of causing an influx of jobber business for shipment prior to October 1.

It is my intention to discuss this with Mr. Little this morning so that we will be prepared to take care of the rush that we, like others, will no doubt have during the month of September.

I discussed the automotive situation with Neil Flora last evening and he informed me that while some little tonnage was placed several weeks ago, nothing more has been done and that all the mills are holding firmly to their prices and are expecting that additional tonnages will have to be placed soon.

I find that our tonnage booked up to last night (Friday) amounted to 2,812 tons and this morning's mail brought several additional cars so we are hoping at least to have 3,000 tons for this week.

¹ Hearings before the T. N. E. C., Part 27, Exhibit No. 2214.

Do hope that your stay in Canada will be pleasant and that you will be greatly benefited by your vacation.

Sincerely yours,

AAD:GRK

THE SYSTEM THAT IS IN EFFECT

(The following dialogue in explanation of the practice of following the base-price announcement of designated or acknowledged leaders, occurred in connection with the examination of the writer of the above letter):

Mr. O'CONNELL. In this case you followed on a price increase. Had you not followed Continental you would have been selling at a lower price.

Mr. DORENBUSCH. That is right.

Mr. O'CONNELL. Would that not have been competitive?

Mr. DORENBUSCH. I don't get the question.

Mr. O'CONNELL. Wouldn't that have been competitive to sell at a lower price? You indicated that it was competition that required you to some extent at least to follow Continental on the way up on the price increase. Would you not have been competitive had you either reduced your prices or kept them lower than Continental prices after this increase?

Mr. DORENBUSCH. I don't think so.

Mr. O'CONNELL. You don't?

Mr. DORENBUSCH. No.

Mr. O'CONNELL. Then competition to your mind is following someone else's prices.

Mr. DORENBUSCH. Well, that is the system that is in effect. * * *

GOVERNMENT PRICES VERSUS INDUSTRIAL PRICES, 1937-38

(Excerpt from the testimony of Mr. Eugene G. Grace, president, Bethlehem Steel Corporation before the Temporary National Economic Committee.)

Mr. GRACE. * * * As your demand increases your ability to maintain your published prices is naturally easier than it is in low demand, where competition is keener. It is all controlled, substantially, by competition in the industry.

Acting Chairman KING. Are you sufficiently familiar with other commodities in other lines of industry than the steel industry, with the woolen industry and all of the cotton fabrications, wheat markets and all of the other agricultural commodities, to state that there was a variation there from what might be designated a base line?

Mr. GRACE. I don't think I had better try to go afield, Mr. Chairman.

Acting Chairman KING. You want to stick to your own last, do you? You want to be a good shoemaker and stick to your own last?

Mr. GRACE. I think we had better stick, from my standpoint, to the steel business.

Mr. FELLER. You wouldn't care to say, Mr. Grace, that the price of steel should behave the way the price of wheat behaves?

Mr. GRACE. No; I wouldn't want to compare the two, but I do know that the steel industry is no different than any other basic industry in our whole bag of tricks of our industrial and economic structure. It goes and comes with the conditions of business.

Mr. HENDERSON. Mr. Grace, I have examined a number of the contracts for Government purchasing during that period, and most of them I have seen show that your company and all other companies bid the base price and the identical price. Was that your policy during that period?

Mr. GRACE. Our policy was, during that period, to get our published prices if we could.

Mr. HENDERSON. And your bidding on Government contracts was at that price?

Mr. GRACE. That is right. We were trying to get it, it was appropriate and proper to get it in our commercial activities if the demand and conditions were such that we could get it. * * *

Q. Is it correct, then, Mr. Grace, to say that during this period when the base price was fictitious as far as the trade was concerned, that it was not fictitious as far as the United States Government was concerned?

Mr. GRACE. I have told you what our policy was in quoting to the United States Government. That is as far as I can go.

² Hearings before the T. N. E. C., Part 27.

Q. Your policy was that the published base price was a real price?

Mr. GRACE. That is the basis upon which we quoted and undertook to get Government business.³

COMPETITION UNDER A NONCOMPETITIVE FORMULA

(Excerpt from the testimony of Mr. Eugene G. Grace, president, Bethlehem Steel Corporation before the Temporary National Economic Committee.)

Mr. O'CONNELL. From my standpoint, I am a little bit on the horns of a dilemma. I am given a situation, told that competitive forces require deviations or in certain situations result in reductions in the price level in the steel industry, and it is given to me as something I should take comfort in; but I can't help but think that from the point of view of your industry that situation is one which is evidence of breaking down, partially breaking-down, of the very price structure which you and the industry think is a good price structure and something to be maintained.

Mr. GRACE. The reason it is so hard to answer specifically, it seems to me this would help us: We have, in effect, published a set of prices. We endeavor to obtain those prices. As we have seen it through this period we have been discussing, that price structure failed. Eventually we drift to another set of prices. Now we have in front of us another published set of prices.

I claim the factor of competition has played a great part in establishing that new set of prices, and for any set of prices which is put out reasonably and fair for any industry it can't be devoid of the competition which has taken place in creating same.

Mr. O'CONNELL. My difficulty is that I am expected to take some comfort out of the forces of competition which result in the change in the price structure on the one hand, and I am to be expected to be comforted by the fact that you are trying to maintain the price structure on the other.

Mr. GRACE. And we poor fellows are suffering.

Mr. O'CONNELL. Isn't it somewhat of an anomalous situation?

Mr. GRACE. It would seem so, stated that way.⁴

PITTSBURGH PLUS STILL OPERATING EAST OF PITTSBURGH IN 1938

(Excerpt from the testimony of Mr. Eugene G. Grace, president, Bethlehem Steel Corporation before the Temporary National Economic Committee.)

Q. Let me see if the committee can understand what the effect of that was. Perhaps a few questions will bring that out. Prior to June 27, 1938, when you sold sheets in Baltimore what price did the purchaser pay?

Mr. GRACE. The method of quoting prices?

Q. What price did you quote?

Mr. GRACE. The quoting method was on the Pittsburgh base. I think I am right.

Q. Yes; was on the Pittsburgh base.

Mr. GRACE. That is right.

Q. And after June 27, 1938, the purchaser at Baltimore was quoted by you on the Sparrows Point base.

Mr. GRACE. That would be the normal operation of that basing point system. Consumer at Baltimore, you asked me?

Q. Yes.

Mr. GRACE. That is right.

Q. And similarly before June 27, 1938, it was the custom of all seller sheets to quote in Baltimore the Pittsburgh price

Mr. GRACE. I should think so.

Q. Now, assuming that the quoted price was adhered to prior to June 27, 1938, the purchaser of sheets at Baltimore would have paid the price at Pittsburgh plus the freight from Pittsburgh.

Mr. GRACE. Right.

Q. Could you tell us, then, what the amount of saving was to the consumer at Baltimore in consequence of the establishment of a Sparrows Point differential.

Mr. GRACE. I can tell you the effect of establishing a Sparrows Point basing price. I can't give you the exact figures. If in establishing Sparrows Point as a base for sheets, we priced at that basing point sheets at the same price as they were being quoted on the Pittsburgh base, then the natural saving would be to

³ Ibid., part 19, pp. 10593-94, 10596-97.

⁴ Ibid., part 19, 10609.

the Baltimore consumer the difference in cost of transporting the plate from our Sparrows Point plant to Baltimore, and the cost of transporting that same plate from Pittsburgh to Baltimore, starting with base prices being the same.

THE BALTIMORE PRICE

Q. Now, prior to the change, prior to the institution of this basing point at Sparrows Point, if you sold to a customer at Baltimore and he paid you the quoted price, which was the Pittsburgh price plus the freight, your company would have received as part of its profit margin an amount equivalent to the charge, the freight charge from Pittsburgh to Baltimore.

Mr. GRACE. Starting with the same price, I have said, we would have net more for our sheets in Baltimore, net price to that extent than the Pittsburgh producer would have netted.⁵

⁵ Ibid., part 19, pp. 10612-13.

IN THE MATTER OF BETHLEHEM STEEL CORPORATION ET AL. DOCKET NO. 962

UNIFORM VALUATION OF WIRE PRODUCTS, WIRE AND WIRE NAILS SOLD ON A "PITTSBURGH BASIS"

The following is a partial abstract of invoices rendered by Bethlehem Steel Co. and American Steel & Wire Co. against Igoe Bros. Co., Brooklyn, N. Y., and Newark, N. J., showing that a uniform valuation, as though made at and shipped from Pittsburgh, is placed by those producers upon wire and wire nails, which are manufactured by Bethlehem Steel Co. at Johnstown, Pa., and Sparrows Point, Md., and by American Steel & Wire Co. (the latter a subsidiary of United States Steel Corporation) at various points in Ohio and Pennsylvania, including Allentown, Pa., and shipped to various points in other States:

Product	Producer	Where promised	Invoice date	Date ordered by consumer	Destination of shipment	Pittsburgh equivalent or Pittsburgh base price ¹	Weight of unit (lbs.)	Freight rate from Pittsburgh	Price delivered at destination	"The Iron Age" price	
										At Pittsburgh	At destination
1 Plain wire	American Steel & Wire Co.	Various	Jan. 25, 1924	Consigned stock	Newark, N. J.	\$2.75	100	\$0.34	\$3.09	\$2.75	\$3.09
Do	do	do	Jan. 31, 1924	do	do	2.30	107	.34	3.364	3.00	3.364
Do	do	Rankin, Pa.	Mar. 1, 1924	do	New Brunswick, N. J.	2.30	107	.34	3.364	3.00	3.564
Do	do	do	Apr. 1, 1924	Mar. 17, 1924	Passaic, N. J.	2.30	107	.34	3.364	3.00	3.364
Do	do	Allentown, Pa.	May 1, 1924	Apr. 23, 1924	do	2.40	107	.34	3.264	3.00	3.364
Do	do	do	May 6, 1924	Apr. 30, 1924	Brooklyn, N. Y.	2.40	107	.34	3.264	3.00	3.364
Do	do	Rankin, Pa.	May 13, 1924	May 9, 1924	West Newark, N. J.	2.90	107	.34	3.264	2.90	3.264
Do	Bethlehem Steel Co.	Johnstown, Pa.	Aug. 15, 1924	do	Newark, N. J.	2.80	107	.34	4.3.164	2.80	3.164
Do	do	do	Aug. 26, 1924	do	Brooklyn, N. Y.	3.2.80	107	.34	4.3.164	2.80	3.164
Do	do	do	do	do	do	3.2.80	107	.34	4.3.164	2.80	3.164
Do	do	do	Aug. 27, 1924	do	New York, N. Y.	3.2.80	107	.34	4.3.164	2.80	3.164
Do	American Steel & Wire Co.	Donora, Pa.	Sept. 2, 1924	Aug. 21, 1924	Elizabethport, N. J.	2.2.80	107	.34	3.164	2.80	3.164
Do	do	do	do	do	do	2.2.80	107	.34	3.164	2.80	3.164
Do	do	Allentown, Pa.	Sept. 3, 1924	Aug. 25, 1924	Passaic, N. J.	2.2.80	107	.34	3.164	2.80	3.164
Do	Bethlehem Steel Co.	Johnstown, Pa.	Sept. 18, 1924	do	Newark, N. J.	3.2.80	107	.34	4.3.164	2.80	3.164
Do	do	do	Sept. 29, 1924	do	do	3.2.75	107	.34	4.3.114	2.75	3.114
Do	do	do	Oct. 8, 1924	do	do	3.2.75	107	.34	4.3.114	2.75	3.114
Do	American Steel & Wire Co.	Rankin, Pa.	Oct. 10, 1924	Oct. 3, 1924	Passaic, N. J.	2.2.75	107	.34	3.114	2.75	3.114
Do	Bethlehem Steel Co.	Johnstown, Pa.	Nov. 11, 1924	do	Brooklyn, N. Y.	3.2.75	107	.34	3.114	2.75	3.114

¹ Price "f. o. b. mill, Allentown, plus freight to equalize with Pittsburgh."

² Price deducted from the delivered price, less the then current freight rate from Pittsburgh.

³ Plus carload freight differential at 1 1/2 cents "to equalize with Pittsburgh." Shipments by Bethlehem Steel subsequent to Nov. 11, 1924 are billed at a delivered price or "freight allowed" to destination.

⁴ Deduced from price "f. o. b. our works, with freight equalized."

Product	Producer	Where produced	Invoice date	Date ordered by consumer	Destination of shipment	Pittsburgh equivalent or Pittsburgh base price	Weight of unit (lbs)	Freight rate from Pittsburgh	"The Iron Age"	
									Price delivered at destination	At Pittsburgh
Common wire nails.	Bethlehem Steel Co.	Johnstown, Pa.	Dec. 5, 1924		Brooklyn, N. Y.	\$2.75	107	\$9.74	\$3.114	\$2.75
Do.	do.	do.	do.		do.	2.75	107	.34	3.114	2.75
Do.	do.	do.	Feb. 5, 1925		New York, N. Y.	2.75	107	.34	3.114	2.75
Do.	do.	do.	Mar. 2, 1925		Newark, N. J.	2.75	107	.34	3.114	2.85
Do.	do.	do.	Mar. 4, 1925		Brooklyn, N. Y.	2.75	107	.34	3.114	2.85
Do.	do.	do.	Mar. 5, 1925		do.	2.75	107	.34	3.114	2.85
Plain wire.	do.	do.	Apr. 30, 1925		New York, N. Y.	2.75	107	.34	3.114	2.85
Common wire nails	American Steel & Wire Co.	Various	May 2, 1925	Consigned stock	Newark, N. J.	2.60	100	.34	2.94	2.50
Plain wire	do.	do.	Dec. 31, 1925	do.	do.	2.65	107	.34	3.104	2.50
Common wire nails	do.	Rankin, Pa.	Feb. 15, 1926	Jan. 20, 1925	South Amboy, N. J.	2.65	107	.34	3.104	2.50
Do.	do.	do.	Feb. 20, 1926	Consigned stock.	Brooklyn, N. Y.	2.65	107	.34	3.104	2.65
Plain wire	do.	do.	do.	do.	do.	2.50	100	.34	2.84	2.50
Common wire nails	do.	Allentown, Pa.	Feb. 22, 1926	Feb. 8, 1926	New York, N. Y.	2.65	107	.34	3.014	2.65
Plain wire	do.	Various	Mar. 23, 1926	Consigned stock	Brooklyn, N. Y.	2.50	100	.34	2.84	2.50
Common wire nails	do.	do.	do.	do.	do.	2.65	107	.34	3.014	2.65
Plain wire	Bethlehem Steel Co.	Johnstown, Pa.	Apr. 19, 1926	Consigned stock.	do.	2.50	100	.34	2.84	2.50
Common wire nails	American Steel & Wire Co.	Various	Apr. 24, 1926	do.	do.	2.65	107	.34	3.014	2.65
Do.	do.	do.	do.	do.	do.	2.50	100	.34	2.84	2.50
Do.	Bethlehem Steel Co.	Johnstown, Pa.	May 3, 1926	Consigned stock.	do.	2.50	100	.34	2.84	2.50
Common wire nails	American Steel & Wire Co.	Various	May 22, 1926	Consigned stock.	do.	2.65	107	.34	3.014	2.65
Do.	do.	do.	do.	do.	do.	2.50	100	.34	2.84	2.50
Plain wire	do.	do.	June 24, 1926	do.	do.	2.65	107	.34	3.014	2.65
Do.	do.	do.	do.	do.	do.	2.50	100	.34	2.84	2.50
Common wire nails	do.	do.	July 22, 1926	do.	do.	2.50	100	.34	2.84	2.50
Do.	do.	do.	do.	do.	do.	2.65	107	.34	3.014	2.65
Do.	do.	do.	do.	do.	do.	2.50	100	.34	2.84	2.50
Do.	do.	Cleveland, Ohio	July 26, 1926	July 19, 1926	New York, N. Y.	2.65	107	.34	3.014	2.65

* Price deducted from the delivered price, less the then current freight rate from Pittsburgh.

JULY 10, 1922.

HON. H. M. DAUGHERTY,

Attorney General, United States, Washington.

DEAR SIR: Referring to the proposed steel mergers and your request for statements from responsible persons in connection therewith, we desire to call to your attention the practice in the steel industry known as "Pittsburgh Plus."

The Federal Trade Commission is now conducting an investigation as to this practice, under a complaint issued upon our application. This investigation has been handled in a very thoroughgoing, competent, and exhaustive manner, and we are confident that the Commission will arrive at a just conclusion upon the evidence when its hearing has concluded.

It is quite probable, however, that if the proposed mergers of the several steel companies are effected, there may be an intimate connection between them and this practice. The proposed mergers may or may not be for the best interests of the industry and for the best interests of the public. As to that we express no opinion, nor have we one to offer. However, since your department has undertaken to investigate and supervise the mergers in question, we believe it of the utmost importance, in the interests of western industry, that such investigation include the practice of "Pittsburgh Plus."

Mergers of steel companies which might otherwise be for the benefit of the industry and the public might have an effect upon the extension and perpetuation of this unjust practice which would be very injurious, and which would seriously handicap the Trade Commission in its present investigation, or possibly render its orders ineffectual.

For the reasons above indicated we desire to call this practice to your attention and to request that it be included in your investigation in order that the interests of this association, which represents 800 of the major western manufacturers, and the interests of the public generally may be fully protected, not only with respect to the mergers themselves, but also with respect to the practice of "Pittsburgh Plus" which must of necessity be intimately connected therewith.

For your information we are enclosing some data and some expressions of opinion with respect to the practice. We believe you can fully inform yourself with regard to the same through the Federal Trade Commission.

Trusting that this matter may have your attention, we are

Very truly yours,

WESTERN ASSOCIATION OF ROLLED STEEL CONSUMERS,
W. E. MCCOLLUM, *Secretary.*

EXHIBIT 54

*Consolidated balance sheet of the Lackawanna Co. and subsidiary companies as of
Dec. 31, 1921*

ASSETS

Cost of property, real estate, buildings, plant
machinery, etc.:

As at Dec. 31, 1920.....	\$82, 938, 602. 74
Net additions during 1921.....	1, 249, 133. 76

84, 187, 736. 50

Less: Depreciation, depletion, and amor- tization reserves.....	21, 316, 232. 84
--	------------------

\$62, 871, 503. 66

Investments in ore companies, etc., less amortization.....	5, 253, 688. 50
--	-----------------

Cash in hands of sinking-fund trustees and other trust funds....	860, 076. 91
--	--------------

Current assets:

Inventories.....	\$13, 304, 041. 43
Miscellaneous accounts receivable.....	913, 407. 55
Customers' accounts (less reserve).....	3, 473, 044. 97
Notes receivable.....	170, 376. 59
Cash.....	2, 259, 580. 62
Marketable securities.....	415, 161. 59

20, 535, 612. 75

*Consolidated balance sheet of the Lackawanna Co. and subsidiary companies as of
Dec. 31, 1921—Continued*

Deferred charges.....	\$114, 686. 66
	<hr/>
	89, 635, 568. 48
	<hr/>

NOTE.—The acquisition by the Lackawanna Bridge Works Corporation (a subsidiary company) of the fabricating plants of Lackawanna Bridge Co. and Ferguson Steel & Iron Corporation on Jan. 3, 1922, is not reflected in this balance sheet.

LIABILITIES

Capital stock:

Preferred 7-percent cumulative—authorized	\$10, 000, 000. 00	
Common—authorized	60, 000, 000. 00	
Issued.....		\$35, 108, 500. 00
Capital stock of subsidiary companies not held by Lackawanna Steel Co.....		3, 887. 50

Bonded debt:

Lackawanna Steel Co.:		
First-mortgage 5-percent convertible gold bonds due 1923.....	\$10, 862, 000. 00	
First consolidated mortgage gold bonds due 1950—Series A, 5 percent convertible.....	6, 891, 000. 00	
Car trust certificates, due 1922-26.....	558, 000. 00	
	<hr/>	18, 311, 000. 00
Subsidiary companies bonds.....	4, 700, 000. 00	
Less: The Lackawanna Iron & Steel Co. bonds formerly assumed by Lackawanna Steel Co. and now assumed by Bethlehem Steel Co.....	1, 775, 000. 00	
	<hr/>	2, 925, 000. 00

Current liabilities:

Current accounts payable and pay rolls.....	2, 583, 424. 40	
Notes payable.....	43, 000. 00	
Taxes and interest accrued.....	441, 215. 67	
	<hr/>	3, 067, 640. 07
Reserves for contingencies and miscellaneous operations.....		318, 443. 94

Surplus:

Balance as at Dec. 31, 1920.....	\$33, 812, 601. 26	
Deduct: Loss for year as per profit and loss account.....	3, 384, 876. 79	
	<hr/>	30, 427, 724. 47
Less: Dividends on common stock.....	526, 627. 50	
	<hr/>	29, 901, 096. 97
		<hr/>
		89, 635, 568. 48

*Consolidated profit and loss account of the Lackawanna Co. and subsidiary companies
for the year ended Dec. 31, 1921*

Gross sales and earnings.....	\$18, 301, 331. 84
Less: Manufacturing and producing costs and operating expenses.....	<hr/>
	18, 036, 058. 80
	<hr/>
	265, 273. 04
Dividends on investments, net income from property rented, etc.....	406, 129. 17
	<hr/>
	671, 402. 21
Deduct:	
Administrative, selling, and general expenses.....	\$649, 943. 21
Taxes.....	1, 093, 472. 47
Commercial interest and discount.....	10, 262. 55
	<hr/>
	1, 753, 678. 23

Consolidated profit and loss account of the Lackawanna Co. and subsidiary companies for the year ended Dec. 31, 1921—Continued

Operating deficit after deducting all expenses, including ordinary repairs and maintenance amounting to \$2,823,064.91, but not renewal expenditures and other appropriations for the current year, which are deducted below	\$1, 082, 276. 02
Deduct:	
Interest on bonds and other obligations:	
Lackawanna Steel Co.	\$887, 962. 50
Subsidiary companies	147, 916. 66
	<u>1, 035, 879. 16</u>
Appropriations:	
For extinguishment of mines and mining investments	\$151, 557. 31
For depreciation and accruing renewals	1, 378, 176. 99
	<u>1, 529, 734. 30</u>
	2, 565, 613. 46
Deficit for the year	3, 647, 889. 48
Less: Adjustment account of excess provision for Federal taxes and sundry reserves less inventory revaluation adjustment	263, 012. 69
Net loss for the year	3, 384, 876. 79
Surplus, Jan. 1, 1921	33, 812, 601. 26
	<u>30, 427, 724. 47</u>
Less: Dividends on common stock	526, 627. 50
Surplus at Dec. 31, 1921	29, 901, 096. 97

EXHIBIT 55

BETHLEHEM STEEL CORPORATION—MIDVALE STEEL & ORDNANCE CO.

CONSOLIDATED PROFIT-AND-LOSS ACCOUNT OF THE MIDVALE CO. AND THE CAMBRIA CO., AND THEIR RESPECTIVE SUBSIDIARIES (EXCEPT AS STATED BELOW) FOR THE YEAR ENDED DECEMBER 31, 1922

The following is a statement of the profit and-loss-account of the Midvale Co., the Cambria Co., and their respective subsidiaries for the year ended December 31, 1922 (excluding, however, the operations of the Nicetown plant and other properties that are not to be acquired by Bethlehem Steel Corporation or any of its subsidiaries):

Net income before providing for depreciation, amortization, and depletion, and after providing for all taxes	\$1, 901, 324. 96
Other income: Interest, dividends, and other miscellaneous income	1, 425, 805. 92
	<u>3, 327, 130. 88</u>
Less: Interest charges	2, 603, 120. 57
	<u>724, 010. 31</u>
Deduct: Provision for depreciation, amortization, and depletion	4, 253, 628. 03
Net loss for the year 1922 after providing for profits applicable to minority interest	3, 529, 617. 72
Surplus: Unappropriated, Dec. 31, 1921	\$53, 551, 936. 32
Less: Amount applicable to the properties that are not to be acquired by Bethlehem Steel Corporation or any of its subsidiaries	16, 461, 284. 41
	<u>37, 090, 651. 91</u>
Surplus: Unappropriated, Dec. 31, 1922, carried to balance sheet	33, 561, 034. 19

MIDVALE STEEL & ORDNANCE CO.—CONSOLIDATED BALANCE SHEET OF THE MIDVALE CO. AND THE CAMBRIA CO. AND THEIR RESPECTIVE SUBSIDIARIES (EXCEPT AS STATED BELOW) AS OF DECEMBER 31, 1922:

The following is a consolidated balance sheet as of Dec. 31, 1922, of the Midvale Co., the Cambria Co., and their respective subsidiaries (excluding, however, Midvale-Cambria Co., Midvale Steel Co. of Philadelphia & London, Ltd., the Nicetown plant of the Midvale Co., and the other properties that are to be acquired by said new corporation and the obligations that are to be assumed by it):

ASSETS

Capital assets:		
Property account: (less depletion)-----	\$174, 644, 798. 66	
Less: Reserve for depreciation, relining of furnaces, and coke oven renewals, etc-----	22, 284, 719. 69	
		\$152, 360, 078. 97
Investments in and advances to affiliated companies-----		1, 991, 783. 00
Special funds in hands of trustees: For payment or redemption of bonds or notes-----		18, 548. 51
Current assets:		
Inventories of products, materials and supplies-----	\$34, 537, 719. 60	
Advance payment on ores, etc-----	1, 292, 797. 56	
Marketable securities-----	2, 848, 757. 20	
Accounts and notes receivable-----	10, 345, 812. 63	
Cash in banks and on hand-----	3, 211, 743. 92	
		52, 236, 830. 91
Deferred charges to operations-----		1, 910, 445. 13
		<u>208, 517, 686. 52</u>

LIABILITIES

Capital liabilities:		
Capital stock:		
Authorized-----	\$150, 000, 000. 00	
Outstanding-----	\$100, 000, 000. 00	
Capital stock of subsidiary companies not held by Midvale Steel and Ord- nance Co. (par value)-----	2, 019, 450. 00	
Guaranteed stock: Cambria Iron Co. Stock (see note below)-----	8, 465, 625. 00	
		110, 485, 075. 00
Funded and secured debt-----		50, 836, 900. 00
		161, 321, 975. 00
Current liabilities:		
Accounts payable, including advance payments on contracts, pay rolls, and accruing liabilities-----	\$6, 859, 535. 65	
Bond interest accrued-----	551, 600. 83	
		7, 711, 136. 48
Reserve funds: Contingent funds, including reserve for doubt- ful accounts and depreciation of securities-----		1, 151, 196. 02
Surplus: Appropriated, applicable to minority stock interests, premium and discount on capital liabilities, etc-----		4, 772, 344. 83
Surplus: Unappropriated-----		33, 561, 034. 19
		<u>208, 517, 686. 52</u>

NOTE.—Cambria Steel Co. guarantees an annual dividend of 4 percent on the above-mentioned Cambria Iron Co. stock as rental for property held under the 999-year lease.

The annual meeting of the Corporation is held on the first Tuesday in April of each year at the principal office of the corporation, at the Prudential Life Building, 755 Broad Street, Newark, N. J.

The fiscal year of the Corporation ends on the 31st day of December of each year.

The directors of the Corporation are as follows: C. Austin Buck, of Bethlehem, Pa., and O. G. Jennings, Charles M. Schwab and Harold Stanley, of New York City, term expiring 1923; John W. Griggs and Alvin Untermeyer, of New York City, H. G. Dalton, of Cleveland, Ohio, and Archibald Johnston, of Bethlehem, Pa., term expiring 1924; and Eugene G. Grace and Henry S. Snyder, of Bethlehem, Pa., and Grayson M.-P. Murphy and Moses Taylor, of New York City, term expiring 1925.

The officers of the Corporation are as follows: Charles M. Schwab, chairman of the board of directors; Eugene G. Grace, president; Archibald Johnston, Henry S. Snyder, H. E. Lewis, James H. Ward and William F. Hartman, vice presidents; R. E. McMath, secretary; William F. Hartman, treasurer; Norborne Berkeley, and William J. Brown, assistant secretaries; W. L. Achenbach and William J. Brown, assistant treasurers; F. A. Shick, comptroller; and W. L. Lewis, assistant comptroller.

The transfer agent for the stock of the Corporation is the Equitable Trust Co. of New York, 37 Wall Street, New York City, and the registrar of the stock is Guaranty Trust Co. of New York, 140 Broadway, New York City.

BETHLEHEM STEEL CORPORATION,
By H. S. SNYDER, *Vice President*.

EXHIBIT 56

In the Matter of ESTHLEN STEEL CORPORATION, ET AL - Docket #902

ILLUSTRATING THE "OVER-NIGHT EFFECT" OF THE MODIFICATION OF THE "PITTSBURGH PLUS" METHOD OF MERCHANDISING WIRE AND WIRE NAILS IN THE TERRITORY WEST AND SOUTH OF PITTSBURGH (SEE NOTE) IN PARTIAL COMPLIANCE WITH THE ORDER OF THE FEDERAL TRADE COMMISSION IN DOCKET NO. 780

This graphic portrays the amounts of the relative price reductions in Territory West and South of Pittsburgh (also Buffalo, N. Y., see NOTE) which became effective immediately (or as subsequently modified) upon partial compliance with the Cease and Desist order of the Federal Trade Commission in Federal Trade Commission v. United States Steel Corporation, et al (for the partial abrogation of the "Pittsburgh basing" practice and the adoption, in lieu thereof, of multiple bases, or nominal bases at certain producing points other than Pittsburgh), i.e., the relation of such revised prices to those prevailing at Pittsburgh under the previously existing practice of basing prices solely upon Pittsburgh, without regard to where the commodity was produced or consumed, known as "Pittsburgh Plus."

NOTE: The relative reduction shown at Buffalo, N. Y., is due to the fact that a nominal base was established at Cleveland, Ohio, on a price parity with Pittsburgh and the further fact that the freight rate from Cleveland to Buffalo is less than that applying from Pittsburgh to Buffalo.

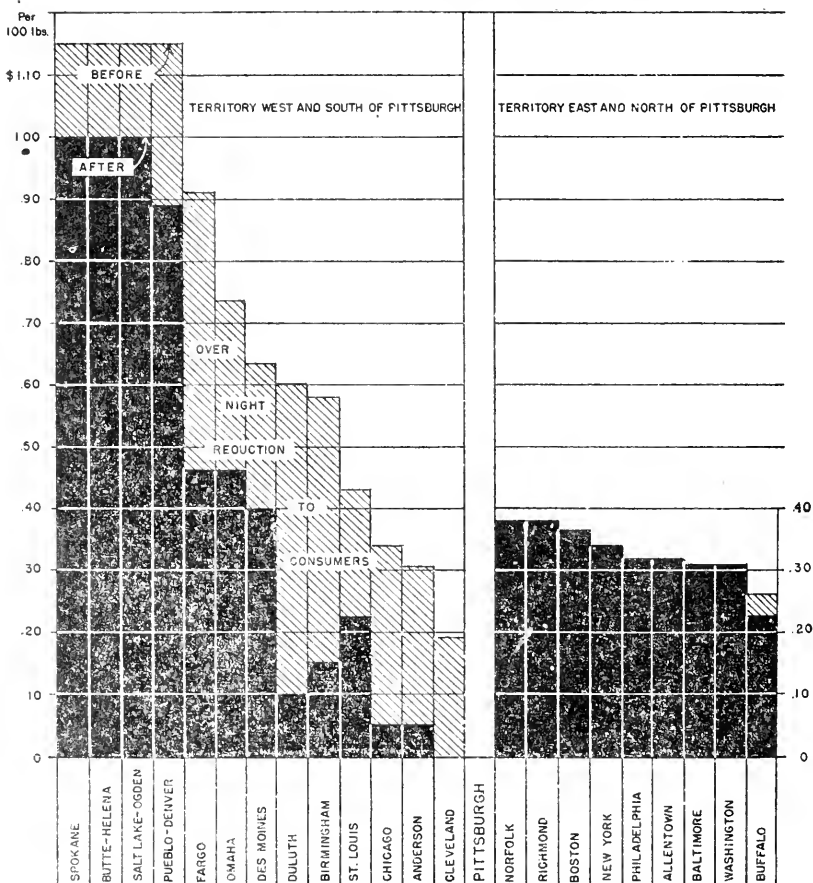
LEGEND:



Indicates amount of arbitrary additions to the price "base Pittsburgh" which existed at representative consuming points immediately prior to September 16, 1941, or the equivalent of the then current freight rates from Pittsburgh.



Indicates revised additions to the price "base Pittsburgh" which became effective immediately (or as subsequently modified) under partial compliance with the order of the Commission in the above mentioned case.



IN THE MATTER OF BETHLEHEM STEEL CORPORATION, ET AL. DOCKET NO. 962

ILLUSTRATIONS OF THE "OVERNIGHT EFFECT" AT CERTAIN POINTS OF THE ORDER OF THE FEDERAL TRADE COMMISSION IN FEDERAL TRADE COMMISSION v. UNITED STATES STEEL CORPORATION. DOCKET NO. 760

Section 1: (1) The prices, "base Pittsburgh," applying on wire and wire products, sheets, and tin plate, as quoted in "The Iron Age," issue September 18, 1924, which issue next precedes that in which is contained the publication of notice by the subsidiary companies of United States Steel Corporation, dated September 16, 1924, of their intention to comply with the order of the Commission in *Federal Trade Commission v. United States Steel Corporation* (docket No. 760) "insofar as it is practicable to do so";

(2) The then current carload freight rates applying from Pittsburgh to various consuming points, some of which are also producing points;

(3) The prices "delivered" at such destinations, or the so-called "Pittsburgh plus" prices;

Section 2: (4) The prices at producing points other than Pittsburgh, resulting from compliance with the Commission's order, as quoted in "The Iron Age";

(5) The nearest basing point established as a result of that order, as quoted in "The Iron Age," at which were located mills of the United States Steel Corporation;

(6) The then current carload freight rates applying from the so-called "basing points";

(7) The resulting prices "delivered" at the various destinations; and

(8) Under caption "Amount of reductions effective September 25, 1924," the actual reduction in cents per 100 pounds and the reductions in cents per 100 pounds which the new basis provides from the full "Pittsburgh plus" system.

Wire nails, base, per keg (100 pounds):									
Pittsburgh, Pa. ²	2.80	32	3.12	Pittsburgh, Pa.	2.75	32	2.97	.15	0
Allentown, Pa. ²	2.80	31	3.11	do	2.75	31	2.96	.15	0
Baltimore, Md.	2.80	31	3.11	do	2.75	34	2.99	.15	0
New York, N. Y.	2.80	34	3.14	do	2.75	23	2.98	.18½	3½
Buffalo, N. Y.	2.80	26½	3.06½	Cleveland, Ohio	2.75	23	2.75	.24	19
Cleveland, Ohio ²	2.80	19	2.99	do	2.75				
Anderson, Ind. ²	2.80	30½	3.10½	Anderson, Ind.	2.85		2.85	.29	24
Chicago District Mills ²	2.80	34	3.14	Chicago District Mills	2.95		2.95	.45	40
Duluth, Minn. ²	2.80	60	3.40	Duluth, Minn.	2.85	84	3.69	.26	21
Pueblo, Colo. ²	2.80	115	3.95	Chicago District Mills	2.85		2.90	.48	43
Birmingham, Ala. ²	2.80	58	3.38	Birmingham, Ala.	2.90				
Sheets, black, No. 28, per 100 pounds:									
Pittsburgh, Pa. ²	3.50	5	3.55	Pittsburgh, Pa.	3.50	5	3.55	0	0
Gary, Ind. ²	3.50	34	3.84	Gary, Ind.	3.60	0	3.60	.24	24
Baltimore, Md.	3.50	31	3.81	Pittsburgh, Pa.	3.50	31	3.81	0	0
Tin plate (100 pounds), box:									
Pittsburgh, Pa. ²	5.50	0	5.50	do	5.50	0	5.50	0	24
Gary, Ind. ²	5.50	34	5.84	Gary, Ind.	5.60	0	5.60	.24	24
Elwood, Ind. ²	5.50	31	5.81	Elwood, Ind.	5.60	0	5.60	.21	21
Baltimore, Md.	5.50	31	5.81	Pittsburgh, Pa.	5.50	31	5.81	0	0

¹ "The Iron Age," issue Sept. 25, 1924, p. 778.

² Also producing points.

³ "The Iron Age," issue Nov. 13, 1924, p. 1314.

⁴ "The Iron Age," issue Nov. 5, 1925, p. 1290.

⁵ "The Iron Age," issue Feb. 11, 1926, p. 433.

⁶ "The Iron Age," issue Oct. 23, 1924, p. 1099.

APPENDIX D

THE FUNDAMENTAL PRINCIPLE OF EFFICIENCY IN MASS PRODUCTION BY DR. FRANK FETTER ¹

As an introduction to a discussion of the relation of efficiency to the size of business organization, it is important at the outset to outline the terms used in the discussion of this subject and to indicate the various meanings assigned to them.

AMBIGUITY OF ECONOMIC TERMS

Every economic discussion is beset with misunderstandings by reason of the shifting senses in which words are used by speakers or are understood by hearers. Words are often used with conscious sophistry to mislead; more often speakers and hearers alike are innocently misled by the same confusion of words; again, their minds fail to meet because they are talking about very different things under the same names. Many of the popular errors and many of the controversies on economic questions result from the ambiguity of words. The legislative, executive, and judicial branches of Government all alike occasionally fall victims to verbal confusion. The utmost caution in the use of economic terms is called for when entering upon the discussion of an important economic public question such as this one. The principle of the pure food law should be applied to economic terms; they should be truthfully labeled like bottles of drugs to show their contents. Some, innocent looking enough on the outside, are filled with rank poison.

What is needed is not merely an exercise in the new indoor sport of semantics for its own sake. Rather, the very practical task is to consider the varieties of meaning which occur constantly in statements on this subject, and which baffle even the most careful students as well as confuse the public mind. A frame of reference, so to speak, should be established within which economic terms may be accurately used and located.

AMBIGUITY OF THE TERM "EFFICIENCY"

In the present subject this caution is especially needed. Each of the principal terms used, efficiency, business, size, combination, etc., is used with various shades of meaning. What is efficiency and how is it to be measured—by lower costs of production, by promoters' profits, or by higher dividends on invested capital? In all such cases efficiency is judged by the benefit accruing to a few persons owning the particular business, not by any benefits passed on to the public in the form of lower prices and better services. Moreover, certain other grave issues of a social and political nature are entirely left out of consideration.

¹ This statement should be regarded as consisting solely of the opinions of the author.

It can hardly be doubted that the promoters and advocates of bigger business organizations are thinking of efficiency primarily and almost wholly in the former sense. Private profit is, of course, what motivates them, even though, to placate the public, they mostly present public benefits as the sole purpose of greater size in business. That is no crime—only a rationalization of self-interest—to make it appear as benevolence. The public and public officers are to blame if they allow themselves to be caught by this bait to fool gudgeons. It seems obvious that the only sort of efficiency which can have any ultimate significance for public policy is that which results in lower prices, better goods and qualities, and better social economic conditions for the people. Simple as is this distinction in the meaning of efficiency and essential as it is to the purposes of this committee, it is almost wholly ignored or is hopelessly confused in much of the discussion of this subject.

THE VARYING CONTENT OF THE WORD "BUSINESS": SINGLE UNITS

Even the term "business" is vague and variable, as are the words frequently employed as its synonyms—such as industry, enterprise, concern, company, corporation, etc. These terms are all used to designate both a single plant and various kinds of groupings or collections of plants. Confusion is therefore inevitable when these terms are used in relation to the word "size."

The single-unit business, in its primary and typical form, presents few complications as compared with the plural-unit kind or kinds. It is a single physical unit, and is at a single definite location. It is a unit technologically; that is, it is operated as a physical unit, and it is under a single ownership—individual, partnership, or corporation. It is the old-fashioned kind of business which could and did act independently and compete in services and prices in the absence of clearly illegal conspiracy or contracts in restraint of commerce, affecting quantity of production, services, and prices to the public. It is the kind of business organization which unquestionably most facilitates true market competition and the maintenance of the competitive system if and when that is the public policy. The decrease and disappearance of the single-unit business has created the problem which faces the public and this committee today.

PLURAL-UNIT BUSINESSES

In contrast, the plural-unit business presents a bewildering variety and degree of complications, in the meaning of business size. These relate to the number of physical units (or plants), to the size of these units considered first separately and then collectively, to their likeness or difference of technical equipment, operation and products, to their dispersion in geographical location, to the various forms and degrees of centralization or decentralization, both in technical operation and in management, and also in respect to price and other commercial policies of buying, selling, etc., and, finally, to the kinds and extent of their unity of proprietorship. It is obvious that in this situation it is impossible, without confusion, to make any sweeping statements regarding the efficiency and size of business without carefully distinguishing between different kinds of business size. The original simple separateness and independence of ownership, operation, and

price policy of single-unit businesses has been replaced by various kinds and degrees of combination into more complex ownership, operation, and price policy of modern corporations.

COMBINATION AS PROCESS AND AS STATE

It is well, therefore, to consider the meaning of the term "combination" which enters so largely into the discussion of the antitrust laws. The words combine and combination originated in medieval Latin, being derived from the Latin roots *com* (together) and *bini*, or *bis* (the Aryan cognate of the English word "two"). Combination originally meant the union of two, but has ceased to be so limited and now means the union of two or more things. Like most words ending in "tion," it has both a verbal sense of a process and a noun sense of the group of things resulting from the process. It is defined today (in the Century Dictionary) as: "The act of combining, or the resulting state; also a number of things combined, or something formed by combining." It may seem trivial to note this distinction between process and state, but it appears to have had real practical significance in the interpretation of the antitrust laws. If the prohibition of combination in restraint of commerce applies only to the process of forming a corporation, then the mere state of combination among former competitors completed before prosecution began is no offense. This narrow view seems indeed to have been taken by our highest court in respect to section 7 of the Clayton Act. On the contrary, if "combination" in the antitrust laws is understood to have both meanings recognized by lexicographers, the mere state of combination would appear to be equally with its formation an illegal restraint of commerce. Indeed, is it not the very substance of the matter with which public policy is concerned, i. e., the preservation of free competition and independent enterprise—to which the question of when or how the combination was formed is but incidental and subordinate? Every state of combination in ownership among separate producing plants as completely prevents price competition among them as could be effected by contractual price agreement among the constituent units, which is unquestionably unreasonable and illegal restraint of commerce. If a state of combination is the essential condition which the Sherman Act aimed to prevent and declared to be illegal, it appears that an enormous existing structure of combinations in industry would have to come under scrutiny. Their existence is a continuing offense, however much a statute of limitations may apply to their formation.

RELATIVE DEGREES OF COMBINATION; DEFINED BY OWNERSHIP

The unification resulting from business combination is not necessarily absolute. It obviously may occur and exist in varied forms and degrees and in respect to various facts and practices. At one extreme, any contract between business units independently owned, which even temporarily substitutes unity for independent action and competition in management, production, and selling policies, is, insofar and for the time, a combination in the wider sense. At the other extreme is the completest possible combination of plural units, by which all separate ownership of the constituent parts is extinguished and all legal identity and independence of control is merged into a single governing whole.

Somewhere between these two extremes, a distinction is made and a line is rather loosely drawn between combinations of a limited and temporary nature, such as are made between business entities still retaining otherwise their independence of action and, on the other hand, combinations of a more substantial and enduring character which terminate identity of ownership and the independence of legal action of the constituent parts.

Recognition of this difference is implied in the Sherman Act where three terms are repeatedly used: Contract, conspiracy, and combination. These words rather obviously are not used as exact synonyms. The words "contract" and "conspiracy" suggest more limited and temporary modes of unification between separate business entities, whereas combination suggests their more lasting and substantial union.

As a layman, I do not presume to treat in any formal and systematic way the legal distinctions involved, but merely call attention to a distinction made both in the law and in popular economic usage. This usage marks the practical limits of the present discussion. The idea of combination (and its common synonym, merger) in the discussion of the antitrust laws thus includes all those processes and states of unified ownership which give a unified control over management, production, and commercial policies, as contrasted with more temporary relationships such as pools of various kinds, gentlemen's agreements, price arrangements, certain types of trade-association activities, and the basing-point practice. All of these leave the proprietary identity of the parties substantially intact.

VARIOUS MODES OF ATTAINING OWNERSHIP COMBINATION

Even after this limitation, this concept of combination is still one of great complexity. It is the result of the phenomenal growth of industrial corporations in America during the past 100, and especially the last 50 years, under the skillful manipulation of the corporation lawyers. An effective degree of industrial combination may also be brought about by one or some of a large variety of extra-legal practices. The complete analysis of the bewildering legal inventions is a task for the jurist, but many of the features are obvious even to the interested layman. On the very border line are conditions innocent in appearance, such as interlocking directors, which one hesitates to include but which practically may be quite effective. The trust device was tried but soon condemned by the courts.

The establishment by producers—both those with a single plant and those already in combinations—of branches, while not entirely negligible, has a comparatively small part in the explanation of the present state of big business. Its part is so small it that is usually forgotten in the discussion of big business. Combination is assumed to be not merely a state of common ownership of plural plants but such a state only that has resulted from a process of combining formerly independent competing plants. The problem of new branches built by a parent company may safely be put aside for the present. The purchase and absorption of existing competition is now the essential problem.

About the importance of the holding company in creating industrial combinations, there can be no debate; it has been the most potent single agency for bringing about combination among existing actual

and potential competitors, and the resulting decline of competition because of the decrease in the number of independent sellers. As a device for concentrating into a few hands the management and control of other people's money, nothing remotely approaching the holding company in simplicity and effectiveness has been discovered. It is not merely the holding company created especially for the purpose of holding the entire common stock of its subsidiaries which is significant for the combination movement. When the old rule broke down that only natural persons could hold corporate stock, every corporation became a holding company to the extent of its investments in other corporations. This is now a familiar story. By pyramiding organizations and proxy voting, a small group of men with a ridiculously small percentage of the total investment in a great combination of formerly independent businesses can retain control of the whole complex of businesses indefinitely. Moreover, the ownership by one corporation of a comparatively small fraction of voting stock in another corporation may, for some practical purposes, be as truly a combination as is complete amalgamation or as is a giant holding company.

OWNERSHIP COMBINATION VERSUS PRODUCTIVE UNIFICATION

It will be observed that combination by means of special holding companies or by ownership of stock in other corporations gives unity to the ownership, but not to the productive processes of the subsidiary companies. The physical plants and equipment remain largely under decentralized management; they still produce singly, while the officers of the controlling corporation are concerned almost wholly with financial and general organization and commercial matters. It is well to remember this when considering the claims of increased productive efficiency that are made for size attained by combination. Among the financial and commercial matters that are controlled by combinations are all general price policies and price relationships. Combination by holding companies (and substantial intercorporate stock ownership) gives even more complete control over competition between subsidiaries formerly independent than the most elaborate conspiracy and collusion between them could have given if they had remained separate. It is power over price policies absolute in degree and unlimited in time. It is well to remember this when considering the radically different treatment which trade association agreements have had at the hands of the courts as compared with combination by means of outright mergers and holding companies.

HORIZONTAL COMBINATIONS

A familiar classification of industrial combinations is into the two kinds, horizontal and vertical (also called integrated). A single merger may unite both kinds in some measure. It should be observed that the differences between these two involve further complications in the conception of business size and its relationship to efficiency. There is a corresponding widespread confusion in the discussion of this question. Horizontal combination is that in which plural plants of the same kind, normally separate physically and geographically and located more or less economically in relation to their market areas and consumers' destinations, are combined in respect to ownership by the various legal devices before mentioned. This gives unity in

respect to commercial and price policies, but does not unify the productive plants physically, and usually it neither changes their number nor increases their unit size. This is a conspicuous fact of observation, although in exceptional cases one or more of the plants acquired may be discontinued and their cost in the merger charged to invested capital thus permanently increasing overhead costs by adding the costs of removing troublesome competitors. Nevertheless, financial size attained by horizontal combination is constantly confused by the apologists of bigness with increased size of single plants, and it is assumed to have the same beneficial effects that under some conditions result from greater mass production. This will be recalled in our further consideration of the question of size and efficiency.

VERTICAL COMBINATION IN OWNERSHIP OR IN OPERATION

Vertical combination is that in which plural plants and resources of different kinds and at different stages of the changes which products undergo from natural materials to more nearly final form are united in respect to ownership. Vertical combination (like horizontal combination) may be thought of either as a process of combining ownership or as the state of united ownership however attained. A common synonym is integration but it is somewhat more ambiguous in respect to the state of unity and refers sometimes to united ownership but more often to the united operation of the plants and processes thus owned. In both senses, more or less indefinitely, corporations are classified as unintegrated, semi-integrated, and fully integrated. Evidently integration is a relative term in respect to previous practice and to stages of technical development. Even in the smallest plant something more than a single process is performed and there is some integration of equipment and productive processes.

The term vertical combination (or integration) introduces an ambiguity in the thought of size, not present in horizontal combination. Plants horizontally combined are physically alike and perform like operations at different locations. They are united by ownership but not in their operation. In contrast, the thought of integration first presented is that of a unified, continuous, physical operation on successive processes under one roof or within some practical plant boundaries; but often the thought vacillates and integration is taken to mean simply the unified ownership of scattered resources and equipment (such, for example, as coal, iron ore, blast furnaces, rolling mills, and fabricating plants) which may be widely separated in space and separately operated. The constituent elements of such an integration have no features of technical efficiency not available to any single-unit business of optimum size. The resulting confusion in court decisions may be referred to later.

SIZE: PHYSICAL AND FINANCIAL GROWTH

Turning to the question of the way in which size of business is increased, it is important to distinguish (1) between physical growth and financial growth, and (2) between the growth of a single plant and the growth of a combination of plants. Physical growth in the amount of resources and equipment is the primary fact. The single-unit business may enlarge its plant and equip it better. A combination may

(1) likewise enlarge each of its separate plants, and further (2) may build new plants, and (3) may acquire the plants of its competitors.

Physical growth in our capitalistic system is accompanied, preceded, or followed, by financial growth, which may be obtained by a single-unit business either from outside investors (the capital markets) or from plowing back profits (reinvestment of earnings).

Plural-unit corporations are financed in the same two ways in which single corporations are financed, and also by various methods for merely exchanging corporate securities. That is, the growth of plural corporations is financed in three ways: (1) By plowing back profits used to enlarge existing plants or to build new ones; or to acquire the plants of competitors. (2) By new capital from outside used for the same three purposes. (3) By exchange of corporate securities, and various other financial devices, not requiring a total of new capital to be obtained from outside. It would be difficult to overemphasize the significance of this last feature in accounting for the ease and success with which promoters interested in and profiting by the formation of mergers have been able to effect them. No doubt many reluctant owners of long-established enterprises have, by a variety of influences, been coerced into exchanging their independent properties for stock in new mergers.

MASS PRODUCTION

We turn now from the terms and concepts connected with size to those connected with efficiency.

Mass production primarily and generally means a relatively large degree of specialization in a single plant which turns out a large number of a particular kind of product, or of a particular pattern, model, or size of a product. It is a relative term, as it may apply to a greater or less degree of specialization and to a larger or smaller mass of products of the same kind from the same factory. Some of the most conspicuous examples of mass production are plants that are largely engaged in assembling parts, some or many of which have been brought from the first stage of the crude materials to an advanced stage of fabrication in other industries and plants, under different ownership, each specializing in its stage of production. In certain respects, it appears that mass production is the opposite of integration, not its synonym, as is sometimes assumed.

The phrase "economy of large production" is used to designate the advantage in lower costs (on the average and per unit) of mass production as compared with the cost of producing simultaneously or in succession different products in the same plant. The economy consists in the smaller unit cost (and hence larger resulting profit) of large, continuous, quantity production as compared with small, more or less discontinuous production of certain goods.

TECHNICAL ADVANTAGES OF LARGE PRODUCTION IN A SINGLE PLANT

It is apparent that "the economy of large production" in this sense is essentially a phenomenon of the single unit plant rather than of plural unit plants. It is a matter of internal arrangements and economies within a single plant. It is technical or technological, not financial or commercial; that is, it is the sum of various economies of time, materials, and wear and tear of machinery combined with labor

used in a continuous process on one product, is compared with a more or less discontinuous process with change of products and patterns. Certain of these advantages are well recognized and elementary, and call for no exhaustive enumeration. They include (1) the more use of highly specialized machinery for a single product, thus reducing the machine cost attributable to each unit of product; (2) less disuse of machines during changes and adjustments for sizes, patterns, etc.; (3) reduction of labor cost for changes of machines for gages, processes, etc.; (4) reduction of labor cost through increased skill resulting from specialized practice; (5) various miscellaneous advantages, such as economy in factory space, storage space, use and waste of materials, etc. Such economies of production in single plants should not be confused with certain other actual or alleged economies of large size in the case of plural unit combinations, such as mass buying, monopolistic buying and selling power, economy of salesmanship due to absence of competition, etc. Obviously, the economy of mass production in its proper sense does not even imply the necessity of very large size in a single unit factory. It is more a matter of the degree of specialization attainable within a single factory than a matter of the size of the plant as a whole. A small factory employed on a few patterns of a single kind of product may get a fuller measure of economy of mass production than a much larger factory which produces a variety of products. A variety of special appliances and parts may be economically produced in comparatively small plants and later assembled in comparatively large plants, as Henry Ford has frequently declared and to some extent has demonstrated. Whether there are further advantages in having these diverse and decentralized plants owned by the assembling plant is again another matter not to be confused with the question of mass production.

ECONOMIC LIMITATIONS OF MASS PRODUCTION

However real is the economy of mass production, and however great it may at times be, it varies with the practical conditions and is distinctly limited. Like every sort of economic advantage, it is subject to a principle of decreasing returns. After a certain degree of mass production in any situation the gains of further specialization in one plant and at one place becomes less and less, and at length a point is reached beyond which unit factory costs tend to increase. Moreover, a limit is put to the advantages of mass production by an external factor, the cost of transporting and distributing the products to greater and greater distances. Adam Smith saw this clearly, and he said that the advantages of geographical division of labor were limited by the area within which they could be profitably exchanged. We have to do here with an optimum point in the economy of mass production. It is beneficial up to the point of economic maximum of the single plant, but beyond that point it turns into a disadvantage. Truth lies with the golden mean. It is often implied and sometimes explicitly declared with an appearance of seriousness that any limitation of the size of corporations means a return to the hand tools and the small neighborhood shops of the Middle Ages. The exaggerations and error of such a statement surpasses absurdity. It implies first of all a confusion of combinations with specialized factories of optimum size. It ignores the part which the advance of science, invention,

education, and improved social and political conditions have had in improving the technical arts; and it subtly asserts that all recent technical progress has resulted from the growth of big business through the financial combination of plants, and therefore that progress would cease and change to disastrous retrogression if limits were put to financial bigness with centralized ownership. I know of no serious suggestion from any critic of big business that any single producing plant shall be smaller than the optimum size for the most efficient operation in the area served, or that it shall use any but the best tools and methods which modern science and the technical arts make possible.

HORIZONTAL COMBINATION IS NOT MASS PRODUCTION

In the light of these distinctions, what is to be thought of the claim that the economy of mass production results from horizontal merger of duplicate plants under a single ownership? What technical economy of mass production could result from the mere common ownership of two or more duplicate plants? The one most plausibly claimed is that, if the plants are of varying degrees of efficiency the poorer ones will all be brought up to the level of efficiency of the best. This is a matter in which there seems to be no positive evidence.

Even though no technical economies result from the larger size of combinations, there may be, and doubtless are, certain advantages to some persons and of some kind, or else there would be no such corporations formed. But personal advantage and private profit are no sure proof of technical economy. Important questions are, what sort of advantages result from this kind of growth in bigness; and who profits by these advantages? If the foregoing analysis is sound, it follows that industrial combination cannot make for economy of mass production in the technical sense, beneficial to the whole community, though it may create some other kind of advantages to those who form or control the combinations.

Simple as is the distinction, when formally set forth, between a large single plant with its economy of mass production and a big business in the sense of the combined ownership of plural plants, it is constantly ignored, either innocently or intentionally, with resulting great confusion of thought.

EX-PRESIDENT TAFT'S CONFUSION OF COMBINATION SIZE WITH PLANT SIZE

One notable example may suffice, that to be found in the highly significant little volume by ex-President Taft, *The Antitrust Act and the Supreme Court* (1914). When summing up "the effect of antitrust law on big business" (pp. 126-128), he recognizes the danger that big business may use its "preponderating capital" (as he calls it) in various ways to destroy their competitors, to oppress patrons, etc. He seems not to question that (in his words) "the largeness of their resources and the extent of their output compared with the country's total output" gives big business the power, "to establish a monopoly and violate the act" if they are not prevented from using that power. But he says: "The object of the antitrust law was to suppress the abuses of business of the kind described." Here he warns against going any further, to take away or reduce the power of big business to

commit these abuses. The antitrust law, he says, "was not to interfere with a great volume of capital * * * concentrated under one organization," and he fully approved of that policy of laissez-faire in respect to size. Why? The context makes it perfectly clear; it was because Mr. Taft was implicitly accepting the doctrine that it was the great concentration of the ownership of plural plants which made possible the economies of mass production. He thinks it would be disastrous to prevent or reduce the size of horizontal combinations. He speaks of "the economies of management and of production due to the concentration under one control of large capital and many plants." And again: "I conceive that nothing could happen more destructive to the prosperity of this country than the loss of that great economy in production which has been and will be effected in all manufacturing lines by the employment of large capital under one management."

At this point he becomes confused between the thought of the economy resulting from a large combination of plants and the economy of mass production in a single plant, and he concludes the paragraph: "There is usually a limit beyond which the economy of management by the enlargement of plant ceases; and where this happens and combination continues beyond this point, the very fact shows intent to monopolize, and not to economize." Having set his feet back on the firmer ground that the economy of large production was essentially a matter of the right size of single plants, Mr. Taft continues with well-warranted expressions of doubt as to "the original purpose of many combinations of capital in this country" having been "confined to the legitimate and proper object of reducing the cost of production," and more to this effect. But the confusion to which we are referring pervades his treatment and seems to have been the cause of his very influential opposition to any further attempt to limit the growth of combinations. He believed it was, in 1914, practically at an end.

PRIVATE ADVANTAGES AS MOTIVES FOR COMBINATIONS

The most immediate motive in the formation of combinations is the profit to be made by promoters, corporation lawyers, and banking underwriters. These are obvious, and I shall not attempt to discuss them further. The advantages most reputed to result from a continued state of combinations of plural units are those in financing, distribution, research, and control of price policy. These will be briefly considered in turn.

(1) The advantages in financing result mainly from the closer relation of big industry to big finance, and is itself a big problem, into which I shall not enter.

(2) The savings in distributing goods after they are physically produced consist principally in the reduction of unit costs of advertising and of salesmen's salaries. In the case of some nationally advertised goods, these savings doubtless are considerable, but are not to be confused with the economy of large production in a single plant. In large part, it seems, the possibility of such savings in distribution costs result from the disappearance of competition in wide regions and the less active efforts therefore needed to secure buyers. This is pretty closely bound up with the monopoly power and greater price control which combination secures the third advantage enumerated later.

(3) A further effect of combination unquestionably is to give greater control over prices. Every combination endows its promoters and directors with a certain degree of monopoly power, both in buying and in selling, not possessed singly or collectively by the constituent elements. This prospect doubtless looms large in the minds of promoters, although, for fear of the law, they soft-pedal this claim and instead almost solely emphasize the promise of mass-production economies. The readiness of the investing public to accept without discrimination the promise of increased profits to result from combination has made easy the promoters' task of floating merger securities and thus has strengthened the motive to combination.

When any combination once formed is challenged either in or out of the courts, its defenders always strenuously deny that in any reasonable degree it tends to restrain commerce or to monopolize any part of interstate commerce. The central importance of this question warrants a brief consideration of the nature of the monopoly which results from combination of formerly competing businesses.

GEOGRAPHICAL MARGIN OF MONOPOLY POWER AND COMPETITION

It is now a familiar truth that no monopoly (or monopoly power) with which the antitrust laws are concerned is absolute; monopoly in business is always partial, limited, and more or less relative. The limits of buyers' purchasing power, the competition of substitute goods, increasing distance between production and use, finally reduces monopoly in specific cases to the point where it shades off into discriminatory competition.

The geographical margin of monopoly is particularly important in the case of horizontal combinations. The small degree of potential monopoly power possessed by a single isolated mill with fairly near competitors is greatly increased when independent plants in a considerable region are combined under one ownership. The degree of monopoly is enhanced and the geographical margin within which it can be exerted by the combination is widened. Early discussions of the monopoly problem were concerned too largely with the question as to what percentage of the total national capacity of an industry had to be combined into a single corporation to constitute a monopoly—whether 40, or 50, or a higher proportion. The courts appear still to consider this the main criterion by which the monopolistic effects of combination are to be judged. It should be clear from the foregoing economic analysis that the merger of formerly competing plants in a certain restricted area may cause a substantial increase of localized monopoly power, however small is the percentage of the national capacity of the industry thus combined.

THE BETHLEHEM MERGER

An outstanding example of this process is the Bethlehem-Lackawanna merger effected mostly between 1916 and 1923. This brought under one control substantially all of the steel-ingot and rolling-mill capacity east of central Pennsylvania and north of the Potomac. The merged mills had a freight advantage in a vast region larger than the German Empire before 1933, and containing a highly industrialized population of some 40,000,000 people, equal to the total population of the United States in 1870. Yet it was only about 15 percent of the

total ingot capacity of the United States. Thereby, the Bethlehem Steel Co. acquired, in that well-rounded region, 7 strong competitors with a combined capacity of over 6,000,000 tons, 8 times that of the Bethlehem Steel Co. itself in 1916. As throwing light on the question of combination and mass production, it should be observed that although the Bethlehem plant has since been somewhat enlarged, all of the acquired mills, with one exception, have continued to be operated. It is the general belief that the much-discussed secret bonuses to the higher officials of the Bethlehem Corporation about that time were based upon the increase of capacity and sales effected by these combinations, and not on any demonstrated reduction either of the cost of production of steel or of its price to the public; certainly not on increased earnings and dividends to stockholders. The bonuses were the rewards of industrial statesmanship, which appears to mean adding one industrial empire to another, somewhat in the style of Hitler.

UNEQUAL APPLICATION OF THE SHERMAN ACT, STIMULATING THE COMBINATION MOVEMENT

It has been frequently complained by representatives of the trade associations that they have been more stringently dealt with under the antitrust laws than have the plural-unit combinations. The same view has been taken by disinterested students of the subject. The membership of many trade associations is composed of comparatively small independent businesses, often or usually single-unit plants. Agreements among them to regulate production and prices, even "reasonable" prices, has been sternly repressed (notably, and finally, in the *Trenton Potteries* decision in 1927). An outright combination of formerly independent plants, however attained, obviously puts an end completely to competition among the constituent members, giving a degree of control over production and price policies not attainable by any trade-association agreement. Yet few combinations have been questioned in the courts and others have been given a clean bill except where the abuses were so exaggerated as to shock public opinion and the court. The public policy has been in effect to accept the unproved claims of economies and benefits to the public resulting from combination, and to throw the burden of proof of restraint of commerce upon the prosecution instead of recognizing the inevitable restraint, in certain areas, equivalent to complete price agreement among competitors, that every combination *ipso facto* involves. The courts assume that the merger of formerly competing plants does not and cannot "tend to form a monopoly" in a reasonable degree, if and when there are still single-unit, nominally independent, plants outside the merger in considerable number. Thus the vital public function of maintaining the competitive process in the industry is left wholly to a comparatively small group of small independents, giving them practically an impossible task, with the result that competition has been weakening in wider and wider areas. This discriminatory application of the laws designed to maintain and restore competition has had the unintended but inevitable effect of actually encouraging the movement toward horizontal combination. Such is the widely shared opinion. Small businesses are under various kinds of pressure from their larger competitors, and from the monopolistic buying power of large combinations in the mass purchasing of supplies

from small business. Every other avenue of escape is closed to them, but the gateway of combination stands open. It is a paradoxical and unstable situation.

ASSUMED ECONOMY OF INTEGRATED OWNERSHIP

The main part of the preceding analysis relates to horizontal combination, while vertical combination has been referred to more briefly and rather incidentally. Both are species of the single genus, combination, but they differ in more respects than they resemble each other. The economic results of one kind cannot validly be assumed to be the same as those of the other kind. Frequently a specific combination is of both kinds in varying degrees, and this increases the possibility of confusion.

Attention has before been called to the error of identifying ownership integration of geographically separate plants and resources at different stages of production with the economic integration of successive physical processes in a single plant. The real economy of physical integration in some cases cannot properly be attributed in all cases to mere unity of ownership. There is double confusion.

Very commonly a different explanation is advanced for the assumed economy of mere ownership combination. Integrated ownership, it is said, saves in the later stages the profits of manufacture which otherwise would have to be paid to independent producers at the earlier stages. This naive theory is rejected by every competent student of the subject. Profits are the return on investment, and investment at each stage is no less after than before the integration—usually more. Each plant continues to have a capitalization on which it must earn profits pro rata, if possible. The rate of profit on the whole investment of an integration cannot as a rule be greater unless some new economies result, and that has to be shown.

The most credible claim of this sort is that selling costs in inter-subsidiary sales (or transfers) are less. The products of the plants at each lower stage are sure to be taken to the extent of the needs of the plants at each higher stage of the technical process. However, unless the capacities and needs of the integrated plants are exactly coordinated the advantages are largely illusory. If the plant at the lower stage has any excess product at any or all times, it must sell it to outsiders, and if the plant at the higher stage has excess needs it must supply the lack by buying from outsiders. Selling cost is a minor element in total cost of production. A much more important question is that of the efficiency in the technical management of integrated plants as compared with that of independent plants specializing on fewer products and selling to numerous buyers. Again it is a question of the economy of mass production. These are the main considerations to be kept in mind; what are the actual results in practice I do not undertake to report.

COMPETITION BETWEEN INTEGRATED AND UNINTEGRATED BUSINESS

A motive that probably has stimulated the movement toward integrating combination has been the fear which independents and smaller companies have when their essential primary and intermediary materials are being monopolized by their larger rivals. Unintegrated independents become increasingly dependent for certain essential

supplies upon the large integrated companies. Take, for example, such materials as iron ore or coal; if they are sold regularly by numerous competing producers in a well-organized open market without discrimination, a small independent company with blast furnaces and rolling mills has nothing to fear. Otherwise, it is simple prudence for each company to strive to secure its own sources of supply at all the earlier stages, at the same time small independent producers at the earlier stages find their markets narrowing and fair competition more difficult. If ownership integration is a problem, it appears to be a problem which, like jealousy, grows by what it feeds on.

The conditions just mentioned are alleged often to be present at the later stage of construction of steel bridges and other structures when integrated and unintegrated bidders compete for the same contract. Likewise in the moving-picture industry where affiliated producers' theaters compete with independently owned theaters. In all such conditions, of which there are now many, the independent company must buy its partly finished materials at the going market price, perhaps from the very integrated company competing for the same job. There is no published price on incorporation sales (or transfers) of materials, and the combination may practice cutthroat discrimination ad libitum without the slightest danger of detection. There appears to be small chance of the ultimate survival of independent unintegrated fabricating plants in various industries under these conditions.

DECISIVE EFFECT OF INTEGRATION IN THE STEEL DECISION

The most momentous decision ever made in a Sherman Act case, it will doubtless be agreed, was that of March 1, 1920, in the Steel Dissolution suit. It also strikingly illustrates the decisive influence upon court decisions which may be exercised by the ambiguity of such an economic term as integration. One has but to reread the decision to see that in the skillful weighing of conflicting claims the balance was tipped by the court's belief that the chief motive for the formation of the United States Steel Corporation was to secure the economies of integration. Without this the court was convinced that further technical progress in the industry was impossible. The circumstances may be recalled without attempting to criticize the legal reasoning, but merely to analyze the economic concept of integration adopted in that decision as one of the main premises of Justice McKenna's legal reasoning.

The Supreme Court had before it two opinions coming from the lower court of four judges, the one (by Judges Wooley and Hunt) held that the organizers had illegal purposes of monopoly, and that "neither the Steel Corporation nor the preceding combinations, which were in a sense its antetypes, had the justification of industrial conditions, nor were they or it impelled by the necessity for integration." (Justice McKenna's paraphrasing of the opinion, 251 U. S. 438.) The other opinion (by Judges Buffington and McPherson) held that the purpose was "not monopoly * * * but concentration of efforts with resultant economies and benefits. The tendency of the industry and the purpose of the corporation in yielding to it were expressed in comprehensive condensation by the word 'integration,' which signifies continuity in the processes of the industry from ore

mines to the finished product." (The same, p. 438.) Both opinions agreed, however, "that the power of the corporation never did and does not now reach to monopoly." (The same, p. 442.) With this last belief, Justice McKenna, speaking for the decisive plurality of the Court, agreed. As to the summary of other matters, he said: "We concur in the main with [the estimate] of Judges Wooley and Hunt. And we add no comment except, it may be, that they underestimated the influence of the tendency and movement to integration, the appreciation of the necessity or value of the continuity of manufacture from the ore to the finished product." (The same, p. 442.)

INTEGRATION IN THE TECHNICAL SENSE—THE COURT'S VIEW

In these expressions, Justice McKenna, while showing the decisive importance he and his colleagues attached to integration as motive and justification for the combination, also repeatedly indicates that he means by integration solely continuity of the physical processes of production, not simply unity of ownership or certain quite different conditions which appear elsewhere in his opinion.

In part, Judge Buffington, whose views regarding integration the Supreme Court was fully accepting, had discussed integration in the technological sense, quoting and epitomizing a considerable volume of testimony on the question (223 Federal Reporter, pp. 121 ff.). The prize exhibit was the Jones Mixer (the same, p. 122) an invention in the late eighties "for the purpose of carrying on the production of steel as one continuous operation from ore to the finished product, never permitting the material to become cool until it reached" a certain stage where "it would be economical to let the material cool."

The obvious waste of fuel in the old discontinuous process gave a dramatic quality to this oft-cited illustration of the economies of physical integration in the production of steel, and caused great importance to be attached to it as an explanation of the economies expected to result from the formation of the giant corporation, a combination of combinations.

There are several remarkable facts weakening or invalidating this testimony as to the movement for physical integration, accepted by both lower and higher courts as the dominant motive for the formation of the United States Steel Corporation. Very briefly expressed, the facts are these. First, the testimony had all been given as a historical account of technological changes which had been largely completed before 1890, and pretty fully completed in the various subsidiaries formed before 1901, the year of the United States Steel combination. Mr. Schwab testified that this sort of economy had reached the limit. Second, the economy of a continuous physical process can be secured in a single plant, and only in what is essentially a single plant at a single location. It is not and cannot be attained by mere combined ownership of plants and resources at successive stages when they are geographically separate. The sort of integration actually attained was not the sort of integration to which the Court was attaching great importance. Third, even if, and to the extent that, technological economies and continuous physical processes were attainable by some part of the integration effected by the formation of the corporation, this afforded no support for the view that

economies could be effected by the horizontal combination involved in the formation of the corporation.

SHIFT TO INTEGRATION IN THE SENSE OF MASS PRODUCTION

As if this were not confusion enough centering about one economic term, it is appalling to find in Judge Buffington's opinion a quite different conception of integration which probably influenced both his decision and that of the Supreme Court as much as did the notion of physical continuity. Justice McKenna quoted in part, with apparent approval, the views of Charles M. Schwab expressed in a conversation with J. P. Morgan, to the effect that before the formation of the corporation the steel industry had "reached the limit, or very nearly so, at which economies from a metallurgical or mechanical standpoint could be made effective." (251 U. S. 443, quoting from 223 Federal Reporter 117.) Mr. Schwab therefore had urged that the next step of economy could be taken by forming a great combination of existing plants—and only in that way, the extremest specialization by single plants in turning out a single kind of product. He said: "instead, as was then the practice, of having 1 mill make 10 or 20 or 50 products, the greatest economy would result from having 1 mill make 1 product, and make that product continuously." (The same.) He would have "one works to devote itself to the manufacture of steel cars, and one kind of steel cars," and he said he would, if he could, build separate mills to roll exclusively angles, beams, etc., even as many as 6 mills to roll beams of 6 different sizes.

The word integration does not appear in Mr. Schwab's vocabulary in this or any other connection, but Judge Buffington calls such specialization integration and Justice McKenna, after quoting Mr. Schwab's description as above, says it shows: "in other words, that there was a necessity for integration, and rescue from the old conditions, from their improvidence and waste of effort."

Now it is clear that this extreme specialization in a single plant is mass production of an extraordinary sort, one plant for the whole country, without regard to the offsetting costs of transportation. It is a ridiculously impractical ideal which the history of the corporation shows it made no effort to attain. Such an effort would have ended in bankruptcy. Moreover, mass production, so far from being integration in the technical sense of carrying on different successive processes under one roof or in a single plant, is logically its direct opposite. The two are mutually limiting concepts. It will be observed also that there is an ambiguity in the term "continuous process" which helps to make the illogical shift. The continuity of technical integration consists of an unbroken transition from one stage of the physical process to another stage; the continuity of mass production consists of the operation without interruption in time of the machines and processes at the same stage.

There are doubtless other difficulties concealed in the innocent looking term "integration," but what has been said is sufficient to indicate the unstable foundations of economic terminology on which the legal reasoning in the majority of Steel Dissolution opinion was erected.

SOME GENERAL CONCLUSIONS

It is not necessary to catalog and repeat the numerous ambiguities which have been analyzed in the foregoing, but it may be worth while to indicate a few of the salient points.

1. The economy of large production to which such importance is attached in claims for the efficiency of big business is a technical fact. It results from operating a single plant in a highly specialized manner.

2. The economy of mass production has distinct geographical and other limits, so that there is an optimum size of plant in any set of conditions. An optimum-sized plant may be fairly small compared with a plant producing a more generalized line of products. Vice versa, a more generalized plant may be the more economical in some cases.

3. The term "size" when used in reference to business organizations is ambiguous if applied without careful distinction to single-unit and plural-unit businesses. The economy of mass production in larger single plants in some cases cannot logically be attributed to, and assumed to result from, the greater size of business attained by the horizontal combination of like plants as has been customary in the claims for the advantages of financial combinations.

4. Certain advantages claimed, and in some degree probably resulting, from the formation of horizontal combination of formerly independent plants, such as promoters' and underwriters' profits, greater ease in financing, economy in selling, greater bargaining power in buying from small producers, and greater control of prices through the weakening of competition and through price leadership, are mainly advantages to the promoters and to the corporation itself, and are not in the nature of net economic efficiency benefitting the community. They are private advantages gained at the cost of other members of the community.

5. Vertical combination, or integration, is a compound ambiguous term; its more usual meaning is the carrying on of a variety of successive physical processes in a single plant, and is the opposite of mass production, not the same. In certain cases, because of the technical conditions, this is doubtless truly economic.

6. Vertical combination of geographically separate plants and resources at successive stages is not physical integration and cannot logically be assumed to have its advantages. Whatever advantages it may have to the promoters and owners of vertical combinations are, like those of horizontal combinations, in the nature of promotion, financial, and price control.

7. Contemporary criticism of "big business" is directed essentially against the excesses of the industrial combination movement and the conditions attending and developing out of plural-unit ownership. So far as single-unit corporations come within the purview of the anti-trust laws, either separately or organized in trade associations, it is largely because of their efforts to protect themselves and to get bargaining equality against their large combined competitors. If these efforts involve conspiracy and specific contracts in restraint of commerce, this is easy to discover as compared with the subtle price leadership of dominant corporations in each industry.

8. The scandalous evils of corporations which have been revealed in a succession of investigations of big business and high finance in the

past 50 years have been almost wholly connected with large business in the financial, not in the technological, sense, and have occurred in plural-unit rather than in single-unit corporations. The problems which almost wholly absorb the attention of the S. E. C. arise out of the increasing complexity of corporate structures. With the rarest exceptions the independent single-unit corporation is not a peculiar public problem under the antitrust laws.

9. We have examined the terms used by the promoters and partisans of the recent and contemporary movement toward "big business," in supporting their claim that it is the main cause of industrial progress and that its limitation or reversal would bring public disaster. To a very large extent, these claims, constantly set forth, have been accepted by the public and have influenced the thought of legislatures and courts. The public, while keenly sensing the monopolistic features and the social and political evils of big-business growth, has been hesitant to act, because it is afraid that it would destroy economic efficiency.

If our analysis of economic terms is correct, the sweeping claims for the virtues of big business are mostly discredited in advance of trial. Those claims are shown to be largely sophistical and contradictory. Our analysis of the confusion would not lead us to expect that big-business combinations would prove in practice to be more truly efficient in the welfare sense than business of moderate size. However, we should expect that the power of combinations to restrain trade and to exercise price leadership would be formidable. We now have a considerable body of factual evidence of the results of many such combinations. It is a matter of common knowledge that the things done and the policies followed have not always been those given as motives by their promoters—in such matters as research, mass production, relative increase of the size of single plants, concentration of physical production at single locations, and reduction of costs in comparison with their smaller rivals. Matter of common knowledge also is the dominance and price leadership exercised by the larger combinations in various industries.

I have not attempted to examine and present factual evidence of the results of large combinations in comparison with medium and small business. That lay outside the field assigned to me, and is to be treated by other witnesses.

APPENDIX E

TABLE 1

(The directors of the American Telephone & Telegraph Co. in 1939 had affiliations in companies which had the following total assets in 1937:)¹

Charles Francis Adams (26 affiliations):

Director, American Employers Insurance Co.....	² \$10, 128, 870
Trustee, Amoskeag Co.....	² 20, 513, 564
Director, Bigelow-Hartford Carpet Co.....	46, 866, 281
Director, Boston Consolidated Gas Co.....	
Trustee, Boston Personal Property Trust.....	² 4, 227, 351
Director, Boston & Albany R. R.....	² 67, 783, 613
Director, Central Aguirre Associates.....	22, 405, 158
Director and vice president, Gauley Coal Land Co.....	² 3, 300, 980
Director, John Hancock Mutual Life Insurance Co.....	² 876, 184, 201
Director, Massachusetts Hospital Life Insurance Co.	
President and trustee, Provident Institution for Savings.	
Director, Employers Liability Assurance Co.	
Director, New York, New Haven & Hartford R. R.....	582, 998, 785
Director, General Electric Co.....	527, 020, 706
Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, United States Smelting, Refining & Mining Co.....	² 71, 479, 993
Chairman of board and director, State Street Trust Co.....	² 88, 954, 095
Director, United Drug Co.....	68, 001, 373
Trustee, Boston Real Estate Trust.	
Director, Eastern Gas & Fuel Associates.....	230, 950, 829
Director, John P. Maguire & Co.	
Director, Boston Fund, Inc.....	² 1, 332, 569
Trustee, Massachusetts Investment Trust.....	² 117, 150, 669
Trustee, State Street Investment Trust.....	² 34, 804, 613
Director, International General Electric Co., Inc.	
President, Boise Gas Light & Coke Co.....	687, 402
Total.....	<u>7, 832, 600, 114</u>

Winthrop W. Aldrich (13 affiliations):

Chairman of board and director, Chase National Bank of New York.....	² 2, 375, 379, 411
President and director, Chase Safe Deposit Co.	
Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, Rockefeller Center, Inc.	
Director, Westinghouse Electric & Manufacturing Co.....	286, 707, 011
Director, Westinghouse Electric International Co.	
Trustee, New York Community Trust.	
Director, Discount Corporation of New York.....	² 98, 418, 728
Member, executive committee, Chamber of Commerce of New York State.	
Director, New York World's Fair, 1939, Inc.	
Trustee, Rockefeller Foundation.	
Trustee, General Education Board.	
Director, Metropolitan Life Insurance Co.....	² 4, 841, 350, 352
Total.....	<u>12, 659, 664, 564</u>

¹ Total assets are before deducting depreciation reserves and are as of Dec. 31, 1937, except when a company ended its fiscal year at some other time. List of directors and their affiliations is from the 1940 edition of Poor's Register of Directors and Executives, and total assets are from Poor's Financial Statements. It was not possible to get the assets of every company, but a great majority were obtained.

² Amount of depreciation reserve, if any, not shown.

James F. Bell (8 affiliations):

Chairman of board and director, General Mills, Inc.	\$77, 909, 968
President and director, Brown Grain Co.	
President and director, St. Anthony & Dakota Elevator Co.	
Director, Northwestern National Bank & Trust Co.	² 121, 143, 526
Director, American Telephone & Telegraph Co.	5, 057, 809, 062
Director, Pullman Co.	
Director, Pullman, Inc.	459, 729, 847
Chairman of board, Distillation Products, Inc.	
Total	5, 716, 592, 403

Charles P. Cooper (3 affiliations):

Vice president and director, American Telephone & Telegraph Co.	5, 057, 809, 062
Director, Guaranty Trust Co. of New York	² 1, 781, 934, 938
Trustee, Mutual Life Insurance Co. of New York	² 1, 368, 850, 469
Total	8, 208, 594, 469

David A. Crawford (11 affiliations):

President and director, Pullman, Inc.	459, 729, 847
President and director, the Pullman Co.	
Director, Harris Trust & Savings Bank	² 231, 069, 295
Director, Continental Illinois National Bank & Trust Co.	² 1, 133, 180, 037
Director, Montgomery Ward & Co.	235, 601, 069
Director, Aridor Co.	
Director, Armour & Co.	375, 900, 276
Director, Michiana Products Corporation.	
Director, Hansell-Elcock Co.	
Director, American Telephone & Telegraph Co.	5, 057, 809, 062
Director, West Virginia Coal & Coke Corporation	12, 912, 236
Total	7, 506, 201, 822

John W. Davis (5 affiliations):

Partner, Davis, Polk, Wardwell, Gardiner & Reed.	
Director, Mutual Life Insurance Co.	² 1, 368, 850, 469
General counsel, United States Rubber Co.	⁽³⁾
Director, Guaranty Trust Co.	² 1, 781, 934, 938
Director, American Telephone & Telegraph Co.	5, 057, 809, 062
Total	8, 208, 594, 469

W. Cameron Forbes (15 affiliations):

Partner, J. M. Forbes & Co.	
Director, United Fruit Co.	359, 499, 753
Director, Commercial Credit Co.	² 343, 678, 698
Director, Arthur D. Little, Inc.	
Director, Massachusetts Fire & Marine Insurance Co.	² 3, 051, 386
Member executive committee, chairman of board and director, Petroleum Heat & Power Co.	7, 800, 395
Director, Boston Cattle Co., Ltd.	
Vice president, Massachusetts Hospital Life Insurance Co.	
Director, Neponset Investment Co.	
Vice president and trustee, Provident Institution for Savings.	
Director and member executive committee, Old Colony Trust Co.	² 10, 380, 940
Director, Copper Range Co.	² 11, 858, 654
Director, Stone & Webster, Inc.	² 13, 550, 324
Director, American Telephone & Telegraph Co.	5, 057, 809, 062
Director, Boston Metal Investors, Inc.	
Total	5, 807, 629, 212

³ Assets not listed here because of the nature of the office held.

George P. Gardner (18 affiliations):

Director, American Telephone & Telegraph Co.....	\$5, 057, 809, 062
Chairman of board and director, Atlantic Coast Fisheries Co.....	4, 356, 640
Trustee, Amoskeag Co.....	² 20, 513, 564
Director, Boston Fund, Inc.....	² 1, 332, 569
Director, Boston Metal Investors, Inc.....	
Director, Eastern Steamship Lines, Inc.....	25, 829, 837
Director, First National Bank of Boston.....	² 720, 348, 364
Director, General Electric Co.....	527, 020, 706
Director, Grosvenor-Dale Co.....	
Director, Grosvenor-Dale Securities Corporation.....	
Director, Massachusetts Fire & Marine Insurance Co.....	² 3, 051, 386
Director, Massachusetts Hospital Life Insurance Co.....	
Director, North American Mines, Inc.....	631, 855
Director, Old Colony Trust Co.....	² 10, 380, 940
Trustee, Provident Institution for Savings.....	
Director, Thomson Electric Welding Co.....	711, 408
Director, Waltham Watch Co.....	9, 837, 742
Chairman of Board & Director, Wilson-Jones Co.....	6, 032, 256
Total.....	<u>6, 387, 856, 329</u>

Walter S. Gifford (9 Affiliations):

President and director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, First National Bank of New York City.....	² 578, 601, 460
Trustee, Bank for Savings in City of New York.....	
Director, Bell Telephone Company of Canada.....	224, 302, 404
Trustee, Johns Hopkins University.....	
Trustee, Carnegie Institute.....	
Trustee, Cooper Union.....	
Trustee, Rockefeller Foundation.....	
Trustee, General Educational Board.....	
Total.....	<u>5, 860, 712, 926</u>

Barklie Henry (3 affiliations):

Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, United States Trust Co. of New York.....	² 117, 966, 643
Director, Texas Co.....	896, 388, 544
Total.....	<u>6, 072, 164, 249</u>

Hale Holden (4 affiliations):

Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, New York Life Insurance Co.....	² 2, 557, 310, 414
Chairman of board and director, St. Louis Southwestern Ry.....	147, 996, 815
Director, Chemical Bank & Trust Co.....	² 598, 804, 851
Total.....	<u>8, 361, 921, 142</u>

Davis F. Houston (5 affiliations):

President and trustee, Mutual Life Insurance Co. of New York.....	² 1, 368, 850, 469
Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, Guaranty Trust Co.....	² 1, 781, 934, 938
Director, North British & Mercantile Insurance Co.....	
Director, United States Steel Corporation.....	3, 066, 968, 828
Total.....	<u>11, 275, 563, 297</u>

² Amount of depreciation reserve, if any, not shown.

Arthur W. Page (3 affiliations):

Vice president and director, American Telephone & Telegraph Co.....	\$5, 057, 809, 062
Director, Chase National Bank.....	² 2, 375, 379, 411
Director, Continental Oil Co.....	195, 714, 463
Total.....	<u>7, 628, 902, 936</u>

Elihu Root, Jr. (5 affiliations):

Partner, Root, Clark, Buckner & Ballentine.	
Director, Teachers Insurance and Annuity Association.	
Director, Mutual Life Insurance Co. of New York.....	² 1, 368, 850, 469
Director, Fiduciary Trust Co. of New York.....	² 15, 885, 093
Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Total.....	<u>6, 442, 544, 624</u>

Philip Stockton (30 affiliations):

Chairman, executive committee and director, First National Bank of Boston.....	² 720, 348, 364
President and director, A. J. Tower Co.	
Director, American Alliance Insurance Co.....	² 9, 843, 354
Director, American Sugar Refining Co.....	160, 902, 985
Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Trustee, Bankers' Electric Protective Association.	
Director, Berkshire Fine Spinning Associates.....	² 16, 969, 770
Trustee, Boston Five Cents Savings Bank.	
Director, Fall River Gas Works Co.....	4, 463, 029
President and director, First of Boston International Corporation.	
Director, French American Banking Corporation.	
Director, General Electric Co.....	527, 020, 706
Director, Gillette Safety Razor Co.....	31, 335, 196
Director, Great American Insurance Co.....	² 50, 130, 660
Director, Guarantee Co. of North America.....	² 4, 588, 026
Director, Haverhill Gas Light Co.....	2, 693, 314
Treasurer and director, Infants' Hospital.	
Director, International General Electric Co.	
Member board of advisory trustees, Ludlow Manufacturing Associates.....	37, 857, 577
Director, Massachusetts Fire & Marine Insurance Co.....	² 3, 051, 386
Chairman of finance committee and life member, Massachusetts Institute of Technology.	
Director, New England Mutual Life Insurance Co.....	² 408, 854, 343
Trustee, Old Colony Investment Trust.....	² 8, 010, 346
Director, Old Colony R. R.....	² 52, 916, 499
Chairman of trustees and president, Old Colony Trust Associates.....	² 9, 931, 004
Director, Pacific Mills.....	66, 730, 019
Director, Railway & Light Securities Co.....	² 9, 662, 409
Director, Scott & Williams, Inc.	
Director, Submarine Signal Co.....	2, 733, 317
Director, Union Freight R. R.....	² 646, 968
Total.....	<u>7, 186, 498, 334</u>

Myron C. Taylor (7 affiliations):

Director, First National Bank of New York.....	² 78, 601, 460
Member executive committee and director, Atchison, Topeka & Santa Fe Ry. Co.....	1, 292, 641, 014
Member finance committee and trustee, Mutual Life Insurance Co.....	² 1, 368, 850, 469
Member executive committee and director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, Metropolitan Opera & Real Estate Co.	

² Amount of depreciation reserve, if any, not shown.

Myron C. Taylor (7 affiliations)—Continued.

Member finance committee and director, United States Steel Corporation.....	\$3, 066, 968, 828
Director, New York Central R. R. Co.....	1, 829, 425, 538
Total.....	13, 194, 296, 371

Samuel A. Welldon (5 affiliations):

Vice president and director, First National Bank of the City of New York.....	2 578, 601, 460
Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, Bigelow Sanford Carpet Co., Inc.....	46, 866, 281
Director, Lehigh & Wilkes-Barre Corporation.....	
Director, Northern Pacific Ry.....	847, 087, 898
Total.....	6, 530, 364, 701

Daniel Willard (18 affiliations):

President and director, Baltimore & Ohio R. R.....	1, 214, 130, 094
President, chairman of board, and director, Alton R. R.....	79, 594, 610
Member executive committee and director, American Association of Railroads.....	
President board of trustees, Johns Hopkins University.....	
Trustee, Johns Hopkins Hospital.....	
Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, Mutual Life Insurance Co. of New York.....	2 1, 368, 850, 469
Chairman of board and director, Baltimore & Ohio Chicago Terminal R. R. Co.....	
Director, Washington Terminal Co.....	
Chairman of board, member executive committee, and director, Reading Co.....	463, 480, 042
Director, Richmond, Fredericksburg & Potomac R. R.....	39, 170, 783
Director, Richmond-Washington Co.....	2 17, 607, 321
President and director, Staten Island Rapid Transit Ry.....	2 14, 149, 104
Chairman of board and director, Buffalo & Susquehanna R. R. Corporation.....	
Chairman of board and director, Buffalo, Rochester & Pittsburgh Ry.....	
President and director, Joliet & Chicago R. R.....	2 1, 526, 294
President and director, Kansas City, St. Louis & Chicago R. R.....	
President and director, Louisiana & Missouri River R. R.....	
Total.....	8, 256, 317, 779

S. Clay Williams (3 affiliations):

Chairman of board and director, R. J. Reynolds Tobacco Co.....	193, 515, 108
Director, Security Life & Trust Co.....	
Director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Total.....	5, 251, 324, 170

TABLE 2

(The directors of the American Telephone & Telegraph Co. in 1939 had business affiliations in companies which had the following total assets in 1937:)¹

American Telephone & Telegraph Co.....	\$5, 057, 809, 062
Alton R. R.....	79, 594, 610
American Alliance Insurance Co.....	2 9, 843, 354
American Employers Insurance Co.....	2 10, 128, 199
American Sugar Refining Co.....	160, 902, 985

¹ Total assets are before deducting depreciation reserves and are as of Dec. 31, 1937, except in a few cases when a company ended its fiscal year at some other time. The assets of every company with which the directors were affiliated were not available but the great majority were; only those companies whose assets could be obtained are listed here. List of directors and their affiliations is from the 1940 edition of Poor's Register of Directors and Executives and total assets are from the 1938 editions of Poor's Financial Statements.

² Amount of depreciation reserve, if any, not shown.

Armour & Co.	\$375, 900, 276
Amoskeag Co.	² 20, 513, 564
Atchison, Topeka & Santa Fe Ry. Co.	1, 292, 641, 014
Atlantic Coast Fisheries Co.	4, 356, 640
Baltimore & Ohio R. R.	1, 214, 130, 034
Bell Telephone Co. of Canada	224, 302, 404
Berkshire Fine Spinning Associates	16, 969, 770
Bigelow-Hartford Carpet Co.	46, 866, 281
Boise Gas Light & Coke Co.	687, 402
Boston Fund, Inc.	² 1, 332, 569
Boston & Albany R. R.	² 67, 783, 613
Boston Personal Property Trust	² 4, 227, 351
Central Aguirre Associates	22, 405, 158
Chase National Bank of New York	² 2, 375, 379, 411
Chemical Bank & Trust Co.	² 598, 804, 851
Commercial Credit Co.	² 343, 678, 698
Continental Illinois National Bank & Trust Co.	² 1, 133, 180, 037
Continental Oil Co.	195, 714, 463
Copper Range Co.	² 11, 858, 654
Discount Corporation of New York	² 98, 418, 728
Eastern Gas & Fuel Associates	230, 950, 829
Eastern Steamship Lines, Inc.	25, 829, 837
Fall River Gas Works Co.	4, 463, 029
Fiduciary Trust Co. of New York	² 15, 885, 093
First National Bank of Boston	² 720, 348, 364
First National Bank of New York City	² 578, 601, 460
Gauley Coal Land Co.	² 3, 300, 980
General Electric Co.	527, 020, 706
General Mills, Inc.	77, 909, 968
Gillette Safety Razor Co.	31, 335, 196
Great American Insurance Co.	² 50, 130, 660
Guarantee Co. of North America	² 4, 588, 026
Guaranty Trust Co. of New York	² 1, 781, 934, 938
Harris Trust & Savings Bank	² 231, 069, 295
Haverhill Gas Light Co.	2, 693, 314
John Hancock Mutual Life Insurance Co.	² 876, 184, 201
Joliet & Chicago R. R.	² 1, 526, 294
Ludlow Manufacturing Associates	37, 857, 577
Massachusetts Fire & Marine Insurance Co.	² 3, 051, 386
Massachusetts Investors Trust	² 117, 150, 669
Metropolitan Life Insurance Co.	4, 841, 350, 352
Montgomery Ward & Co.	235, 601, 069
Mutual Life Insurance Co. of New York	² 1, 368, 850, 469
New England Mutual Life Insurance Co.	² 408, 854, 343
New York Central R. R. Co.	1, 829, 425, 538
New York Life Insurance Co.	² 2, 557, 310, 414
New York, New Haven & Hartford R. R.	582, 998, 785
North American Mines, Inc.	631, 855
Northern Pacific Ry.	847, 087, 898
Northwestern National Bank & Trust Co.	² 121, 143, 526
Old Colony Investment Trust	² 8, 010, 346
Old Colony R. R.	² 52, 916, 499
Old Colony Trust Associates	² 9, 931, 004
Old Colony Trust Co.	² 10, 380, 940
Pacific Mills	66, 730, 019
Petroleum Heat & Power Co.	7, 800, 395
Pullman, Inc.	459, 729, 847
Railway Light & Securities Co.	² 9, 662, 409
Reading Co.	463, 480, 042
R. J. Reynolds Tobacco Co.	193, 515, 108
Richmond, Fredericksburg & Potomac R. R.	39, 170, 783
Richmond-Washington Co.	² 17, 607, 321
St. Louis Southwestern Ry.	147, 996, 815
Staten Island Rapid Transit Ry.	² 14, 149, 104
State Street Investment Corporation	² 34, 804, 613
State Street Trust Co.	² 88, 954, 095

² Amount of depreciation reserve, if any, not shown.

Stone & Webster, Inc.....	\$23, 262, 402
Submarine Signal Co.....	2, 733, 317
Texas Corporation.....	896, 388, 544
Thomson Electric Welding Co.....	711, 408
Union Freight R. R.....	² 646, 968
United Drug Co.....	68, 001, 373
United Fruit Co.....	359, 499, 753
United States Smelting, Refining & Mining Co.....	² 71, 479, 993
United States Steel Corporation.....	3, 066, 968, 828
United States Trust Co. of New York.....	² 117, 966, 643
Waltham Watch Co.....	9, 837, 742
Westinghouse Electric & Manufacturing Co.....	286, 707, 011
West Virginia Coal & Coke Corporation.....	12, 912, 236
Wilson-Jones Co.....	6, 032, 256
Total.....	38, 030, 503, 073

² Amount of depreciation reserve, if any, not shown.

APPENDIX F

TABLE 1

(The directors of the United States Steel Corporation in 1939 had business affiliations in companies which had the following total assets in 1937:)¹

	<i>Total assets</i>
Edward R. Stettinius, Jr. (4 affiliations):	
Chairman of board, United States Steel Corporation-----	\$3, 066, 968, 828
Director, Metropolitan Life Insurance Co-----	² 4, 841, 350, 352
Director, Bradley Transportation Co.,	
Chairman finance committee; member, executive committee; vice president and trustee, New York Museum of Science and Industry.	
Total-----	<u>7, 908, 319, 180</u>
William A. Irvin (2 affiliations):	
Director, United States Steel Corporation-----	<u>3, 066, 968, 828</u>
Director, American Iron and Steel Institute.	
J. P. Morgan (11 affiliations):	
Director, United States Steel Corporation-----	3, 066, 968, 828
Partner, J. P. Morgan & Co-----	² 457, 111, 631
Treasurer and director, Church Hymnal Corporation.	
Treasurer and director, Church Life Insurance Corporation.	
Treasurer and director, Church Pension Fund.	
Director, Church Properties Fire Insurance Corporation.	
Director, Discount Corporation of New York-----	98, 418, 728
Director, Metropolitan Opera & Real Estate Co.	
Member, New York Stock Exchange.	
Director, Pullman, Inc-----	459, 729, 847
Total-----	<u>4, 082, 229, 034</u>
James A. Farrell (1 affiliation): Director, United States Steel Corporation-----	<u>3, 066, 968, 828</u>
Benjamin F. Fairless (9 affiliations):	
President and director, Carnegie Land Corporation.	
President and director, Conneaut Land Co.	
President and director, Bessemer Electric Power Co.	
President and director, Sharon Coke Co.	
Director, Carnegie Natural Gas Co.	
Director, Pennsylvania & Lake Erie Dock Co.	
Director, Pittsburgh Limestone Corporation.	
Director, Michigan Limestone & Chemical Co.	
President, director, member, finance committee, United States Steel Corporation-----	<u>3, 066, 968, 828</u>
W. J. Filbert (1 affiliation): Director and member of finance committee, United States Steel Corporation-----	<u>3, 066, 968, 828</u>

¹ Total assets are before deducting depreciation reserves and are as of December 31, 1937, except in a few cases when the company ended its fiscal year at some other time. The assets of every company were not available. List of directors and their affiliations is from the 1940 edition of Poor's Register of Directors and Executives and total assets are from the 1938 editions of Poor's Financial Statements.

² Amount of depreciation reserve, if any, not shown.

		<i>Total assets</i>
Philip R. Clarke (3 affiliations):		
Director, United States Steel Corporation.....	\$3, 066, 968, 828	
Director, Pure Oil Co.....	269, 620, 191	
President and director, City National Bank & Trust Co. (Chicago, Ill.).....	² 126, 481, 738	
Total.....	3, 463, 070, 757	
Nathan L. Miller (3 affiliations):		
Director, United States Steel Corporation.....	3, 066, 968, 828	
Trustee, Mutual Life Insurance Co. of New York.....	² 1, 368, 850, 469	
Partner, Miller, Owen, Otis & Bailly.		
Total.....	4, 435, 819, 297	
Thomas W. Lamont (11 affiliations):		
Director, United States Steel Corporation.....	3, 066, 968, 828	
Partner, J. P. Morgan & Co.....	² 457, 111, 631	
Director, Guaranty Trust Co.....	² 1, 781, 934, 938	
Director, International Agricultural Corporation (June 30, 1937).....	36, 783, 078	
Director, and chairman of board, Lamont, Corliss & Co.....	9, 330, 623	
Director, Southwestern Construction Co.		
Partner, Drexel & Co. (included in total for J. P. Morgan Co.).		
Director, Atchison, Topeka & Santa Fe R. R.....	1, 292, 641, 014	
Director, Santa Fe Pacific R. R. (included in above).		
Trustee, Metropolitan Museum of Art.		
Trustee, Carnegie Foundation for the Advancement of Teaching.		
Total.....	6, 644, 770, 112	
Junius S. Morgau (5 affiliations):		
Director, United States Steel Corporation.....	3, 066, 968, 828	
Partner, J. P. Morgan & Co.....	² 457, 111, 631	
Member, New York Stock Exchange.		
Partner, Drexel & Co. (included in total for J. P. Morgan Co.).		
Director, General Motors Corporation.....	1, 566, 673, 796	
Total.....	5, 090, 754, 255	
David F. Houston (5 affiliations):		
Director, United States Steel Corporation.....	3, 066, 968, 828	
President and trustee, Mutual Life Insurance Co. of New York.....	² 1, 368, 850, 469	
Director, American Telephone & Telegraph Co.....	5, 057, 809, 062	
Director, Guaranty Trust Co.....	² 1, 781, 934, 938	
Director, North British & Mercantile Insurance Co.		
Total.....	11, 275, 563, 297	
George A. Sloan (5 affiliations):		
Director, United States Steel Corporation.....	3, 066, 968, 828	
Director, Bankers Trust Co. (New York).....	² 975, 069, 368	
Director, Selby Shoe Co. (Apr. 30, 1937).....	² 8, 536, 934	
Director, Goodyear Tire & Rubber Co.....	290, 419, 513	
Director, Cotton-Textile Institute.		
Total.....	4, 340, 994, 643	

² Amount of depreciation reserve, if any, not shown.

Sewell L. Avery (9 affiliations):

Total assets

Director, United States Steel Corporation.....	\$3, 066, 968, 828
Chairman of board and director, United States Gypsum Co.....	84, 681, 409
Director, Chicago Daily News.....	28, 070, 944
Director, Armour & Co. (Illinois) (Oct. 30, 1937).....	375, 900, 276
Director, Northern Trust Co. (Chicago, Ill.).....	² 335, 847, 598
Chairman of board and director, Montgomery Ward & Co. (Jan. 21, 1938).....	235, 601, 069
Director, Peoples Gas Light & Coke Co.....	196, 107, 911
Director, Pullman, Inc.....	459, 729, 847
Director, Pure Oil Co.....	269, 620, 191
Total.....	5, 052, 288, 534

Leon Fraser (10 affiliations):

Member, finance committee, and director, United States Steel Corporation.....	3, 066, 968, 828
President and director, The First National Bank of the City of New York.....	² 578, 601, 460
Director, General Electric Co.....	527, 020, 706
Director, International General Electric Co.....	
Trustee, Mutual Life Insurance Co. of New York.....	² 1, 368, 850, 469
Trustee, Union College.....	
Treasurer, Academy of Political Science.....	
Treasurer, American Academy in Rome.....	
Trustee, American Historical Association.....	
Trustee, Columbia University.....	
Total.....	5, 541, 441, 463

Enders M. Voorhees (2 affiliations):

Chairman, finance committee, and director, United States Steel Corporation.....	3, 066, 968, 828
Director, Johns-Mansville Corporation.....	76, 408, 754
Total.....	3, 143, 377, 582

Irving S. Olds (2 affiliations):

Member, finance committee, and director, United States Steel Corporation.....	3, 066, 968, 828
Partner, White & Case.....	

Myron C. Taylor (7 affiliations):

Member, finance committee, and director, United States Steel Corporation.....	3, 066, 968, 828
Director, First National Bank of New York.....	² 578, 601, 460
Director, New York Central R. R. Co.....	1, 829, 425, 538
Member, executive committee, and director, Atchison, Topeka & Santa Fe Ry. Co.....	1, 292, 641, 014
Member, finance committee, and trustee, Mutual Life Insurance Co.....	² 1, 368, 850, 459
Member, executive committee, and director, American Telephone & Telegraph Co.....	5, 057, 809, 062
Director, Metropolitan Opera & Real Estate Co.....	
Total.....	13, 194, 296, 371

Robert C. Stanley (20 affiliations):

Member, finance committee, and director, United States Steel Corporation.....	3, 066, 968, 828
President and director, International Nickel Co., Inc.....	
President, chairman of board, member, executive and advisory committees, director, International Nickel Co. of Canada, Ltd.....	305, 410, 561
Director, Ontario Refining Co., Ltd.....	
Director, International Sales, Ltd.....	
Member, advisory committee, Mond Nickel Co Ltd. (England).....	

² Amount of depreciation reserve, if any, not shown.

Robert C. Stanley (20 affiliation)—Continued.

Director, Huronian Co., Ltd.	
Director, Canadian Nickel Products, Ltd.	
Director, Centre d'Information du Nickel (France).	<i>Total assets</i>
Director, Canadian Pacific Railway	\$1, 382, 062, 058
Member, executive committee, and director, Chase National Bank (New York)	² 2, 375, 379, 411
Director, American Metal Co., Ltd.	86, 758, 364
Director, Amalgamated Metal Corporation, Ltd. (England).	
Director, Henry Gardner & Co., Ltd. (England).	
Director, International General Electric Co.	
Trustee, Mutual Life Insurance Co. of New York	² 1, 368, 850, 469
Director, Babcock & Wilcox Co.	³ 29, 480, 043
Director, Holland House Corporation of the Netherlands.	
Chairman, Board of Trustees, Stevens Institute of Technology.	
Director, General Electric Co.	527, 020, 706
Total	<u>9, 141, 930, 440</u>

² Amount of depreciation reserve, if any, not shown.³ Depreciation is deducted, the amount of which is not available.

TABLE 2

(The directors of the United States Steel Corporation in 1939 had business affiliations in companies which had the following total assets in 1937:)¹

United States Steel Corporation	\$3, 066, 968, 828
American Metal Co., Ltd.	86, 758, 364
American Telephone & Telegraph Co.	5, 057, 809, 062
Armour & Co.	375, 900, 276
Atchison, Topeka & Santa Fe Ry.	1, 292, 641, 014
Babcock & Wilcox Co.	² 29, 480, 043
Bankers Trust Co. (New York)	³ 975, 069, 368
Canadian Pacific Ry.	1, 382, 062, 058
Chase National Bank	² 2, 375, 379, 411
Chicago Daily News	28, 070, 944
City National Bank & Trust Co. (Chicago, Ill.)	³ 126, 481, 738
Discount Corporation of New York	³ 98, 418, 728
The First National Bank of the City of New York	³ 578, 601, 460
General Electric Co.	527, 020, 706
General Motors Corporation	1, 566, 673, 796
Goodyear Tire & Rubber Co.	290, 419, 513
Guaranty Trust Co.	³ 1, 781, 934, 938
International Agricultural Corporation	36, 783, 078
International Nickel Co. of Canada, Ltd.	² 305, 410, 561
J. P. Morgan & Co.	³ 457, 111, 631
Johns-Manville Corporation	76, 408, 754
Lamont, Corliss & Co.	9, 330, 623
Metropolitan Life Insurance Co.	³ 4, 841, 350, 352
Montgomery Ward & Co.	235, 601, 069
Mutual Life Insurance Co. of New York	³ 1, 368, 850, 469
New York Central R. R. Co.	1, 829, 425, 538
Northern Trust Co. (Chicago, Ill.)	³ 335, 847, 598
Peoples Gas Light & Coke Co.	196, 107, 911
Pullman, Inc.	459, 729, 847
Pure Oil Co.	269, 620, 191
Selby Shoe Co.	³ 8, 536, 934
United States Gypsum Co.	84, 681, 409
Total	<u>30, 154, 486, 212</u>

¹ Total assets are before deducting depreciation reserves and are as of Dec. 31, 1937, except in a few cases when a company ended its fiscal year at some other time. The assets of every company with which the directors were affiliated were not available but the great majority were; only those companies whose assets could be obtained are listed here. List of directors and their affiliations is from the 1940 edition of Poor's Register of Directors and Executives and total assets are from the 1938 editions of Poor's Financial Statements.

² Depreciation is deducted, the amount of which is not shown.³ Amount of depreciation reserve, if any, not shown.

APPENDIX G

TABLE 1

(The directors of the National Steel Corporation in 1939 had affiliations in companies which had the following total assets in 1937:)

Frank W. Blair (11 affiliations):

Director, National Steel Corporation.....	\$262, 735, 192
President and director, Union Joint Stock Land Bank.....	¹ 7, 175, 086
Director, Michigan Bell Telephone Co.....	194, 346, 518
Director, Standard Savings & Loan Association.	
Director, Russell Steel Construction Co.	
Director, Republic Gear Co.	
President and director, River Rouge Improvement Co.	
Director, American Life Insurance Co.	
President, the Whittier Corporation.	
President, Bagley Building Corporation.....	2, 699, 414
Director, Washington Boulevard Buildings, Inc.	
	<hr/>
	466, 956, 210
	<hr/>

Maurice Falk (8 affiliations):

Director, National Steel Corporation.....	262, 735, 192
Director, Weirton Steel Co. ²	
Director, Edgewater Steel Co.	
Director, Farmers Deposit National Bank.....	¹ 95, 812, 534
Director, Farmers Deposit Trust Co.....	¹ 2, 725, 228
Director, Reliance Life Insurance Co.....	¹ 769, 194
Director, Blaw-Knox Co.....	25, 646, 133
Director, Falk Foundation.	
	<hr/>
	387, 688, 281
	<hr/>

George R. Fink (3 affiliations):

President, member executive committee, and director, National Steel Corporation.....	262, 735, 192
President and director, Great Lakes Steel Corporation.	
Director, Manufacturers' National Bank.....	¹ 121, 882, 749
	<hr/>
	384, 617, 941
	<hr/>

Howard M. Hanna (7 affiliations):

Director, National Steel Corporation.....	262, 735, 192
Chairman and director, M. A. Hanna Co.....	62, 251, 587
Director, National Biscuit Co.....	³ 124, 022, 849
Director, Howe Sound Co.....	27, 499, 731
Director, Producers Steamship Co.	
Director, Hanna Iron Ore Co. ²	
Director, M. A. Hanna Coal & Dock Co. ⁴	
	<hr/>
	476, 509, 359
	<hr/>

George M. Humphrey (41 affiliations):

Chairman, executive committee, and director, National Steel Corporation.....	262, 735, 192
President and director, M. A. Hanna Co.....	62, 251, 587

¹ Depreciation reserve, if any, not shown.

² Assets are included in total for National Steel Corporation.

³ Depreciation deducted, amount of which is not given.

⁴ Assets are included in total for M. A. Hanna Co.

George M. Humphrey (41 affiliations)—Continued.

Director, Hanna Furnace Corporation. ²	
Vice president and director, Susquehanna Ore Co.-----	\$4, 148, 531
Chairman of board and director, Susquehanna Collieries Co.	
Director, M. A. Hanna Coal & Dock Co. ⁴	
President and director, Hanna Ore Mining Co. ²	
President and director, Hanna Iron Ore Co. ²	
Director, Eastern Steamship Co.	
Director, Jefferson Coal Co.	
Director, La Belle Steamship Co.	
Director, Mahoning Steamship Co.	
President and director, Richmond Iron Co. ²	
Chairman of board and director, Union Collieries Co.-----	9, 106, 566
Director, Mahoning Ore & Steel Co.	
Director, Pittsburgh Coke & Iron Co.-----	15, 704, 868
Director, Donner-Hanna Coke Corporation.	
Director, Great Lakes Steel Corporation. ²	
Director, Hanna Coal Co. of Ohio. ⁴	
Director, Mesaba-Cliffs Mining Co.	
Director, Michigan Steel Corporation.	
Director, Midwest Steel Corporation. ²	
Director, Weirton Steel Co. ²	
President and director, Western Copper & Mining Co.	
Director, National City Bank (Cleveland, Ohio)-----	¹ 153, 896, 134
Director, Forest City Live Stock & Fair Co.	
President and director, Homer Ore Co. ²	
Director, Industrial Rayon Corporation-----	. 26, 555, 053
President and director, Nokay Iron Co. ²	
President and director, Northern Iron Mines, Ltd.	
Director, Virginia Steamship Co.	
President and director, Waukenabo Co. ²	
President and director, Western Ore Co. ²	
President and director, Ozark Ore Co.	
President and director, Williams Ore Co.	
President and director, Franklin Steamship Corporation. ⁴	
President and director Lake Erie Harbors, Inc.	
Director, Phelps Dodge Corporation-----	340, 942, 652
Director, Hanna Coal Sales Co. ⁴	
President and director, Mahland Ore Co.	
President and director, Manganese Ore Co.	
	<hr/>
	875, 340, 583
	<hr/>

Thomas E. Millsop (2 affiliations):

Vice president, member, executive committee and director, National Steel Corporation-----	262, 735, 192
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President and director, Weirton Steel Co.²

E. W. Mudge (5 affiliations):

Vice president and director, National Steel Corporation-----	262, 735, 192
Owner, Edmund W. Mudge & Co.	
Director, Edgewater Steel Co.	
Director, Fidelity Trust Co.-----	¹ 34, 042, 661
Director, Mudge Oil Co.	

296, 777, 853

Carl N. Osborne (20 affiliations):

Director, National Steel Corporation-----	262, 735, 192
Vice president, treasurer, and director, M. A. Hanna Co.-----	62, 251, 587
Director, American Puddled Iron Co.-----	¹ 312, 852
Director, Franklin Steamship Corporation. ⁴	
Director, Hanna Coal Co. of Ohio. ⁴	
Director, M. A. Hanna Coal & Dock Co. ⁴	

¹ Depreciation reserve, if any, not shown.

² Assets are included in total for National Steel Corporation.

⁴ Assets are included in total for M. A. Hanna Co.

Carl N. Osborne (20 affiliations)—Continued.

Director, Hanna Coal Sales Co. ¹	
Director, Hanna Iron Ore Co. (Michigan). ²	
Director, Homer Ore Co. ²	
Vice president and director, M. H. Hussey Corporation.	
Director, Jefferson Coal Co.	
Vice president and director, Lytle Coal Co.	
Director, Manganese Ore Co.	
Director, Northern Iron Ore Mines, Ltd.	
Director, Ozark Ore Co.	
Vice president and director, Susquehanna Collieries Co.	
Director, Western Copper & Mining Co.	
Director, Western Ore Co.	
Director, Williams Ore Co.	
Director, Youngstown Steel Co.-----	¹ \$1, 572, 152
	<hr/> 326, 871, 783 <hr/>

Murray W. Sales (5 affiliations):

Director, National Steel Corporation-----	262, 735, 192
President and director, Murray W. Sales & Co.	
Director, Manufacturers National Bank of Detroit-----	¹ 121, 882, 749
Director, Detroit Steel Products Co.-----	7, 613, 366
Director, Michigan Bell Telephone Co.-----	194, 346, 518
	<hr/> 586, 577, 825 <hr/>

Charles M. Thorp (5 affiliations):

Director, National Steel Corporation-----	262, 735, 192
Member, Thorp, Bostwick, Reed & Armstrong.	
Director, Edgewater Steel Co.	
Director, Blaw-Knox Co.-----	25, 646, 133
Director, Copperweld Steel Co.-----	6, 704, 633
	<hr/> 295, 085, 958 <hr/>

Ernest T. Weir (21 affiliations):

Chairman of board, member, executive committee and director, National Steel Corporation-----	262, 735, 192
President and director, Bank of Weirton.	
Chairman of board and director, Weirton Coal Co. ²	
Director, Edgewater Steel Co.	
Director, Hanna Ore Mining Co. ²	
Chairman of board and director, Weirton Steel Co. ²	
Chairman of board and director, Great Lakes Steel Corporation. ²	
Director, Hanna Iron Ore Co. (Delaware). ²	
Chairman of board and director, Hanna Furance Corporation (New York). ²	
Chairman of board, president and director, Midwest Steel Corporation. ²	
Director, Pittsburgh & West Virginia R. R. Co.-----	64, 340, 891
Director, Peoples Bank of Hollidays Cove, W. Va.	
Director, Fidelity Trust Co.-----	¹ 34, 042, 661
Director, National Association of Manufacturers.	
Director, Weirton Improvement Co. ²	
Director, Oak Hill Supply Co. ²	
Director, Richmond Iron Co. ²	
Director, Susquehanna Ore Co.-----	4, 148, 531
Director, Maurice & Laura Falk Foundation.	
Director, American Iron & Steel Institute.	
Trustee, University of Pittsburgh.	
	<hr/> 365, 267, 275 <hr/>

¹ Depreciation reserve, if any, not shown.² Assets are included in total for National Steel Corporation.³ Assets are included in total for M. A. Hanna Co.

Total assets are before deducting depreciation reserves and are as of December 31, 1937, except in a few cases when a company ended its fiscal year at some other time. List of directors and their affiliations is from the 1940 edition of Poor's Register of Directors and Executives and total assets are from the 1938 editions of Poor's Financial Statements. It was not possible to get the assets of every company.

TABLE 2

(The directors of the National Steel Corporation in 1939 had business connections in companies which had the following total assets in 1937:)¹

National Steel Corporation.....	\$262,735,192
Union Joint Stock Land Bank.....	² 7,175,086
Michigan Bell Telephone Co.....	194,346,518
Bagley Building Corporation.....	2,699,414
Farmers Deposit National Bank.....	² 95,812,534
Farmers Deposit Trust Co.....	² 2,725,228
Reliance Life Insurance Co.....	² 769,194
Blaw-Knox Co.....	25,646,133
Manufacturers' National Bank (Detroit).....	² 121,882,749
M. A. Hanna Co.....	62,251,587
National Biscuit Co.....	³ 124,022,849
Howe Sound Co.....	27,499,731
Susquehanna Ore Co.....	4,148,531
Union Collieries Co.....	9,106,566
Pittsburgh Coke & Iron Co.....	15,704,868
National City Bank (Cleveland, Ohio).....	² 153,896,134
Industrial Rayon Corporation.....	26,555,053
Phelps Dodge Corporation.....	340,942,652
Fidelity Trust Co.....	² 34,042,661
American Puddled Iron Co.....	² 312,852
Youngstown Steel Co.....	² 1,572,152
Detroit Steel Products Co.....	7,613,366
Copperweld Steel Co.....	6,704,633
Pittsburgh & West Virginia R. R. Co.....	64,340,891
Total.....	1,592,506,574

¹ Total assets are before deducting depreciation reserves and are as of Dec. 31, 1937 except in a few cases when a company ended its fiscal year at some other time. The assets of every company with which the directors were affiliated were not available but the great majority were; only those companies whose assets could be obtained are listed here. List of directors is from the 1940 edition of Poor's Register of Directors and Executives and total assets are from the 1938 editions of Poor's Financial Statements.

² Amount of depreciation, if any, not shown.

³ Depreciation is deducted, the amount of which is not available.

APPENDIX H

Mr. H. Donald Campbell, president of the Chase National Bank of the City of New York, has the following nine other business connections, in addition to the task of running the largest bank in the United States:

- Director, American Alliance Insurance Co.
- Director, American Smelting & Refining Co.
- Vice chairman of board and director, Chase National Bank.
- Vice president and director, Chase Safe Deposit Co.
- Director, Twentieth-Century-Fox Film Corporation
- Director, Great American Indemnity Co.
- Director, Great American Insurance Co.
- Director, Rochester American Insurance Co.
- Director, Consolidation Coal Co.

Mr. Gordon S. Rentschler, president of the National City Bank of New York, the second largest bank in the United States, has the following nine other business connections:

- Director, International Banking Corporation.
- Director, Hooven, Owens, Rentschler Co.
- Director, City Bank Farmers Trust Co.
- Director, Discount Corporation of New York.
- Director, General Machinery Corporation.
- Director, Home Insurance Co.
- Director, Federal Insurance Co.
- Director, National Cash Register Co.
- Director, International Telephone & Telegraph Corporation.

Source: Data is from the 1940 edition of Poor's Register of Directors and Executives.

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